United States Department of the Interior
Bureau of Land Management

ZonaStat-H PZP

Fertility Management Pilot Project for Wild Female Burros
Environmental Assessment

DOI-BLM-AZ-C010-2016-0004

Wild Burros in Southern Black Mountains

July 2016

BLM - ARIZONA - COLORADO RIVER DISTRICT
Kingman Field Office, 2755 Mission Blvd., Kingman, AZ (928) 718-3700

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CHAPTER 1 - INTRODUCTION

1.0 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of a Fertility Management Pilot Project as proposed by the Humane Society of the United States (HSUS). The HSUS has proposed to the Bureau of Land Management (BLM) this project to manage population numbers of wild burros (*Equus asinus*) on public lands. The HSUS proposal is for a four-year project on 115 to 165 free-roaming burros located in northwest Arizona within the BLM Colorado River District (CRD) in the Black Mountain Herd Area (HA) of the Kingman (KFO) and Lake Havasu (LHFO) Field Offices. The Black Mountain Herd Management Area (HMA) is administered through the KFO (BLM 2007) (Figure 1).

This EA provides site-specific analysis that is expected to result from implementation of the HSUS Proposed Action and all alternative(s) that are included. The EA assists the BLM in planning, ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in regulation 40 CFR 1508.27 with regard to context and intensity. An EA provides the information needed to discern if "significant impacts" are expected. If significant impacts are expected, an Environmental Impact Statement (EIS) would need to be completed. If the Authorized Officer for this EA determines that "significant impacts" are not expected to result from the Proposed Action or the selected Alternative, then a "Finding of No Significant Impact" (FONSI) can be prepared and a Decision Record (DR) may be signed approving the Proposed Action or the selected alternative.

1.1 BACKGROUND

The HSUS in cooperation with the BLM proposes to treat female burros (jennies) in the Black Mountain HMA with the immunocontraceptive vaccine Porcine Zona Pellucida (PZP), also known as ZonaStat-H PZP. This drug is federally approved by the Environmental Protection Agency (EPA) and registered under the number 86833–1. This drug is also registered by the Arizona Department of Agriculture, under State ID 41399. PZP is a naturally occurring pig protein which degrades quickly in the environment. If eaten, it is digested like any other protein and cannot pass through the food chain (Kirkpatrick et al. 2012). The EPA labeling for ZonaStat-H states:

> "When transporting for use in the field, store the ZonaStat-H PZP solution in a portable cooler with ice packs. If transportation of the ZonaStat-H PZP solution takes longer than 8 hours, store the ZonaStat-H PZP solution on dry ice in the cooler. Store loaded darts in a cool dry place. In humid areas of the country, store in plastic sealable bags with a desiccant."

Other notifications suggested by the EPA for ZonaStat-H are listed under the Human Health and Safety Section 3.4.4.

The analysis area is located in the Gila and Salt River Meridian, Townships 21 to 31 North, Ranges 16 to 21 West, within various sections of Mohave County, AZ (Figure 1).

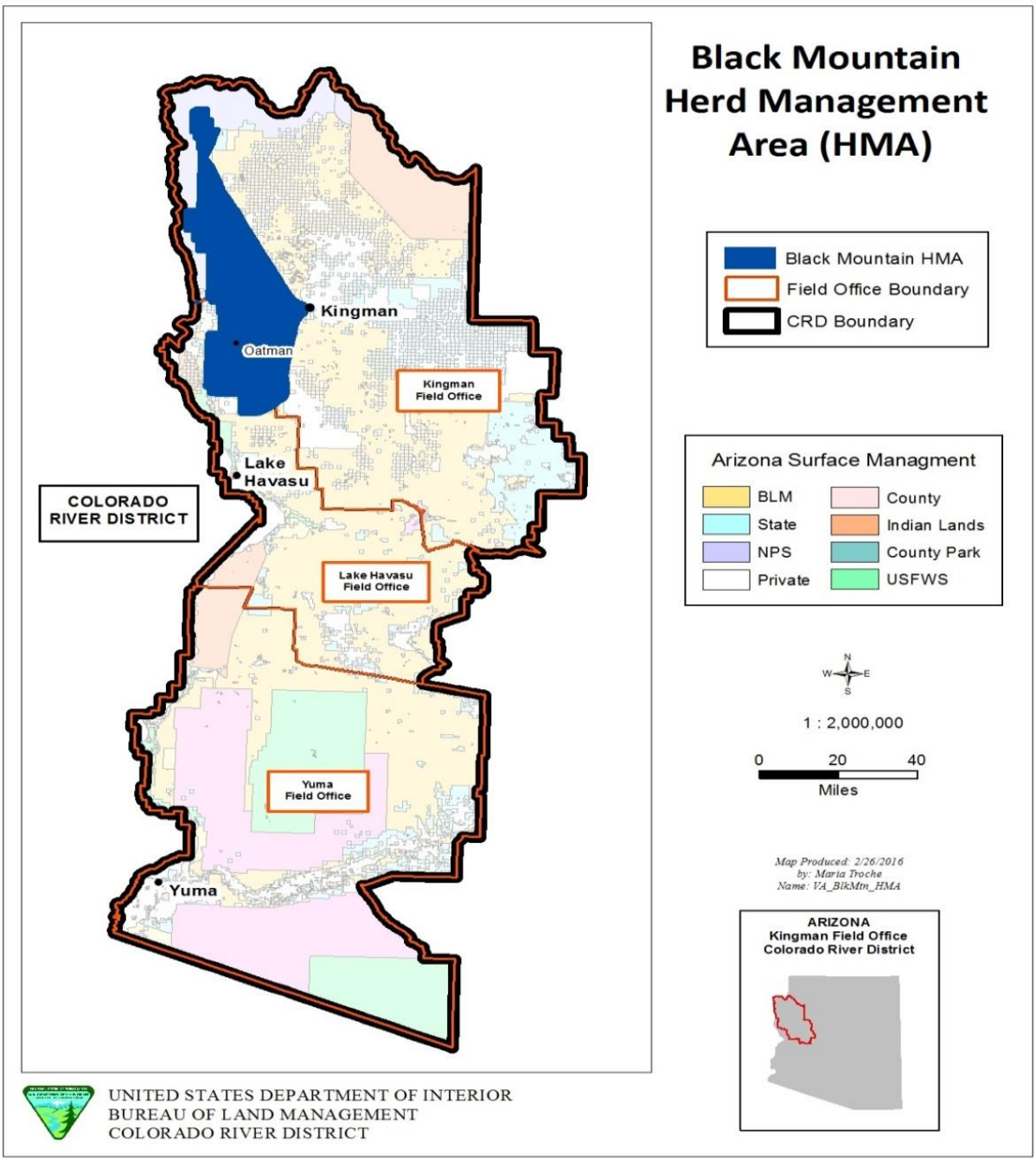

Figure 1: The Black Mountain HMA.

This is the portion of the HMA that is south of State Route 68. The proposed Pilot Project would primarily be concentrated in the southern portion of the HMA. All trap sites and jennies for this project would be captured south of State Route 68.

Information about reproductive control implemented by the BLM can be accessed on the BLM National Wild Horse and Burro Program website.[1]

[1] The BLM wild horse program website can be accessed online at: http://www.blm.gov/wo/st/en/prog/whbprogram.html

BLM has also prepared a webpage explaining Myths and Facts about the Wild Horse and Burro Program.[2] Lastly, for information regarding Fertility Control, see the link at the Science and Research Fertility Control Webpage.[3]

The HSUS's focus for this project is to assess whether booster doses of ZonaStat-H PZP could be applied via opportunistic darting in a safe, effective, and economical manner as one method of reducing reproduction rates to wild and free roaming burros. The current cost of ZonaStat-H is approximately $30 per dose. This only includes the cost of the ZonaStat-H PZP, the adjuvant[4], and the dart to administer the dose. Other associated costs include, but may not be limited to: initial and/or special circumstance requirements for later trapping of the animals, personnel, equipment (i.e., dart projectors), vehicle(s), supplies, and maintenance requirements that would be needed throughout the four year study.

The HSUS Proposal is attached in Appendix A. This document, ***ZonaStat-H PZP: Fertility Management Pilot Project for Wild Female Burros Environmental Assessment***, referred to hereafter as the EA, analyzes proposed activities within the HSUS proposal that would occur on, and which could impact natural resources within, the Black Mountain HMA.

1.2 The Purpose and Need For Action

The purpose of this federal action is to respond to the request of the HSUS to study the logistical feasibility and the effectiveness of using ZonaStat-H PZP as a fertility management tool for wild and free roaming jennies in the Black Mountain HMA. The need for action is to ensure that the HSUS Proposed Action and the alternatives as proposed comply with both the Wild Free-Roaming Horses and Burros Act of 1971(PL 92-195) as amended and the Federal Land Policy and Management Act (1976).

This project also satisfies KFO's planning needs as it addresses another item identified in a previous activity regarding the Black Mountain HMA:

- A public scoping meeting held in April 2015 to discuss ecological concerns in the Black Mountain HMA. During the presentation, fertility treatments were identified as one possibility to reduce wild burro population growth.

1.2.1 The Decision to be Made

The decision to be made is for the BLM Authorized Officer to determine whether or not to allow wild burros within the Black Mountain HMA to be vaccinated with ZonaStat-H PZP.

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[2] The BLM Myths and Facts website can be accessed online at: http://www.blm.gov/wo/st/en/prog/whbprogram/history_and_facts/myths_and_facts.html

[3] The BLM Fertility Control webpage can be accessed online at: http://www.blm.gov/wo/st/en/prog/whbprogram/science_and_research/fertility_control.html

[4] Adjuvant: *Adjuvants are materials that are incorporated into vaccines to enhance the immune response. Trials of the conventional PZP vaccines have routinely used Freund's Complete Adjuvant (FCA), which is recognized as the "gold standard" of adjuvants and is used widely in vaccine research. Copied from the Wild Horse Education Website. Last Accessed: June 6, 2016. https://wildhorseeducation.org/population-control/*

1.3 Conformance and Compliance

1.3.1 Resource Management Plan/Land Use Plan

This EA is in conformance with the following documents:

- Kingman Resource Area Proposed Resource Management Plan/Final Environmental Impact Statement (1993) (includes the Record of Decision and Approved Plan, 1995) (Kingman RMP)
- Lake Havasu Field Office Record of Decision and Approved Resource Management Plan (BLM 2007) (Lake Havasu RMP)
- The Black Mountain Ecosystem Plan (BLM 1996)

The following Management Decisions which pertain to the Proposed Action are taken from the Kingman RMP (BLM 1993):

- Actively manage for healthy, viable populations of wild horses and burros in an ecological balance with other resource values within the three existing herd management areas. Pg.18

The following Management Decisions which pertain to the Proposed Action are taken from the Black Mountain Ecosystem Plan (BLM 1996):

- The Resolution of several Black Mountain issues will require research.

One specific issue is "How might contraceptive methods affect wild burro populations? Could this be used in conjunction with, or as an alternative to, removal of excess burros?" Pg. 57

1.3.2 Other Laws, Regulations, and Guidance

The Proposed Action is in conformance with the Wild Free-Roaming Horses and Burros Act of 1971 (Public Law (PL) 92-195 as amended), with all applicable regulations at 43 Code of Federal Regulations (CFR) 4700.

The Wild Free-Roaming Horses and Burros Act of 1971 (PL 92-195) as amended, Section 1333 (b) (1), states that the Secretary of the Interior and Agriculture shall:

> "determine appropriate management levels of wild free-roaming horses and burros on areas of public lands; and determine whether appropriate management levels should be achieved by the removal or destruction of excess animals, or other options (such as sterilization or natural controls on population levels)."

According to 43 CFR 4700.0-6, "Wild horses [and burros] shall be managed as self-sustaining populations of healthy animals in balance with other uses and the productive capacity of their habitat."

1.4 Scoping, Public Involvement, and Issue Analysis

This project originally began as a research proposal submitted by the HSUS to the BLM through the National Wild Horse and Burro Program. The HSUS Proposal was then forwarded to the KFO for a thorough analysis by an Interdisciplinary Team (IDT) as is required by NEPA. Public involvement would be provided through a public comment period on the preliminary EA prior to the Authorizing Officer making a decision.

The BLM KFO oversees 2.4 million acres of public land in northwestern Arizona. The largest wild burro population in the United States, located in the Black Mountains, is located in the KFO. These animals have relatively few natural predators and herd sizes can nearly double every four years.

One of BLM's goals is to facilitate multiple-use management while ensuring the sustained health of the land. The Federal Land Policy and Management Act of 1976 mandate's the BLM to manage the public lands for multiple-use on a sustained yield basis.

A challenge for BLM is to manage burros within an "Appropriate Management Level" (AML). The Wild Horse and Burro Fact Sheet (2015), created by the BLM and distributed 12/4/2015 explained some of the challenges the BLM faces when attempting to keep wild horse and burros within AML. The Fact Sheet also stated…

> "The BLM spends two thirds of its Wild Horse and Burro Program budget to care for animals removed from the range… Now, each year the BLM only removes as many animals from the range as can be adopted."

In 2015, the BLM began investing $11 million in research to find safe and effective methods to neuter and spay wild horses and develop longer-lasting contraceptive vaccines. At the same time, the BLM is increasing the use of existing short-lasting contraceptives to slow population growth where possible. The graphic below, presented in the Wild Horse and Burro Fact Sheet (2015), is used to illustrate the challenge now before the BLM, and provides a visual representation of why there is so much emphasis on finding ways other than adoptions for reducing the animals currently existing on the rangelands.

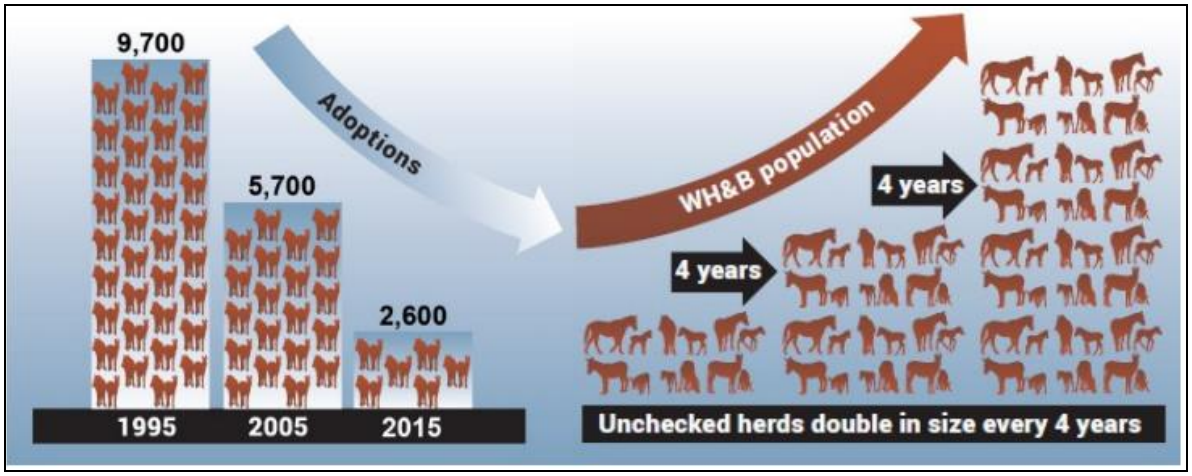

Figure 2. Graphic taken from Wild Horse and Burro Fact Sheet (2015) showing how wild horse and burro populations are growing since the decline of adoptions.

In 2014, the population of burros in the Black Mountain HMA was estimated to be between 1,517 and 1,827 (Griffin 2015). The Black Mountain Ecosystem Plan (1996) set the initial AML at 478 and further stated that the AML would be re-analyzed through monitoring data. One of the BLM goals stated at the end of the scoping meeting made before public in April 2015, where ecological concerns in the Black Mountain HMA were discussed, was to investigate fertility control measures for burro populations.

The National Academy of Sciences found that no fertility control methods exist that were highly effective, easily delivered, and affordable for use across all BLM HMAs (NAS 2013). The report, noted, however that the PZP vaccine, is the most extensively tested fertility control method and may be the most promising option at present.

The Proposed Action reviewed by the BLM KFO IDT was composed of resource specialists who identified resources within the Black Mountain HMA that might be affected and potentially impacted. For this task they used current and past office monitoring records and geographic information system (GIS) data. The results of the review are contained in the Interdisciplinary Team Checklist, Section 3.4.

1.4.1 Identification of issues

Issues carried forward for analysis and identified through the process include the following:

- Impacts to individual wild burros.
  - Expected impacts to individual jennies' from trapping and darting,
  - Expected impacts to herd social structure,
  - Expected effectiveness of proposed fertility control application,
  - Potential effects to genetic diversity, and
  - Potential impacts to animal health, condition, and foals.

The HSUS identified three questions, stated as objectives, in their proposal (Appendix A):

1. What are the effects of the ZonaStat H-PZP vaccine on individual jenny foaling?
2. What are the effects of ZonaStat H-PZP treatments on the health and social dynamics of treated burros?
3. Can unhabituated[5] burros be retreated remotely by opportunistic darting (chance via meeting in the field), bait station, and/or bait trapping?

Analysis in this EA by the BLM addresses the project impacts to other resources such as: Areas of Critical Environmental Concern (ACEC's), cultural resources, grazing and rangeland health, human health and safety, Native American Traditional Concerns, recreation, vegetation and wildlife (to include: Invasive and Noxious Species, Threatened and Endangered Species, Critical Habitat, and BLM Sensitive Species), wild horses and burros, and wilderness.

1.4.2 Issues Considered but Eliminated from Further Analysis

This analysis is only for the proposal that has been brought forward by the HSUS. Other issues such as: burros over AML, gathers and/or removals, etc., will not be analyzed in this EA. However, they are mentioned in the Reasonable Foreseeable Activities Section.

[5] Unhabituated versus habituated jennies: For this EA, jennies living in or around the town of Oatman, AZ are considered habituated.

1.4.3 Supplemental Authorities

The following table contains references to authorities that require resources to be considered for analysis in NEPA documents if the resources are relevant to the Proposed Action.

Table 1. Supplemental Authorities

List of Supplemental Authorities

Element	Relevant Authority	BLM Manual or Regulation
Air Quality	Clean Air Act, as amended (42 USC 7401 *et seq.*); Section 176(c) CAA - General Conformity	MS 7300 40 CFR 93 subpart B
Areas of Critical Environmental Concern	Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq.)	MS 1613
Cultural Resources	National Historic Preservation Act, as amended (16 USC 470)	MS 8100
Environmental Justice	E.O. 12898 "Federal Actions to Address Environmental Justice in Minority and Low-Income Populations" 2/11/94	H-1601-1
Farm Lands (Prime or Unique)	Surface Mining Control and Reclamation Act of 1977 (30 USC 1201 *et seq.*) Farmland Protection Policy Act (7 USC 4202 *et seq.*)	7 CFR 658.4
Floodplains	E.O. 11988, as amended "Floodplain Management" 5/24/77	MS 7260
Forests and Rangelands (HFRA projects only)	Healthy Forests Restoration Act of 2003 (P.L. 108-148)	
Human Health and Safety (Herbicide Projects)	E.O. 13045 "Protection of Children from Environmental Health Risks and Safety Risks	MS 9011
Migratory Birds	E.O. 13186 "Migratory Birds"; Migratory Bird Treaty Act (16 USC 703 - 711)	50 CFR 10, 17
Native American Religious Concerns	American Indian Religious Freedom Act of 1978 (42 USC 1996)	MS 8100 H-8160-1
Non-Native Invasive and Noxious Species	E.O. 13112, Invasive Species, 2/3/99	MS 9015 517 DM 1
Threatened and Endangered Species	Endangered Species Act of 1973, as amended (16 USC 1531)	MS 6840
Wastes, Hazardous or Solid	Resource Conservation and Recovery Act of 1976 (42 USC 6901 *et seq.*) Comprehensive Environmental Response, compensation, and Liability Act of 1980, as amended (42 USC 9615)	MS 9180 MS 9183
Water Quality, Surface/Ground	Safe Drinking Water Act, as amended (42 USC 300f *et seq.*) Clean Water Act of 1977 (33 USC 1251 et seq.)	MS 7240 MS 9184
Wetlands/Riparian Zones	E.O. 11990 "Protection of Wetlands" 5/24/77	MS 6740
Wild and Scenic Rivers	Wild and Scenic Rivers Act, as amended (16 USC 1271)	MS 8014
Wilderness	Federal Land Policy and Management Act of 1976 (43 USC 1701 *et seq.*) Wilderness Act of 1964 (16 USC 1131 *et seq.*)	43 CFR 6300 H-8550-1 MS 8560

1.5 Summary

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the

implementation of the proposed project. In order to meet the Purpose and Need of the proposed project in a way that resolves the issues, the BLM has considered both the Proposed Action and a No Action Alternative.

CHAPTER 2 - PROPOSED ACTION AND ALTERNATIVES

Introduction of the Alternatives

Alternative A – Proposed Action (Conduct Fertility Pilot Project with Management Requirements) and Alternative B – No Action (Do Not Conduct Fertility Pilot Project). There were no other alternatives suggested by the HSUS.

Other alternatives were not considered by the BLM KFO IDT because the HSUS provided for one specific action and it did not indicate a need for additional alternatives beyond those contained in the Proposed Action. The No Action is considered and analyzed to provide a baseline for comparison of the impacts of the Proposed Action.

2.1 The Proposed Action - Alternative A

The HSUS proposes a four-year field project in the Black Mountain HMA to provide scientific information regarding the use of ZonaStat-H PZP for population management in wild burros.

The project would:

(1) Analyze the feasibility (i.e., cost effectiveness, re-capture potential, etc.) of treating wild and free roaming burros (jennies) with ZonaStat-H PZP in the field.

(2) Examine the health and safety effects of using the immunocontraceptive vaccine ZonaStat-H PZP on a subset (115 to 165) of wild and free roaming jennies, and

(3) Quantify the effects of ZonaStat-H PZP on the individual jennies' reproductive rates.

The expectations for the Proposed Action include: collect data from this project to provide BLM managers with current, up-to-date scientific based information to assist with making wild burro management decisions.

The Proposed Action Alternative includes three steps:

1. Capture 2. Treatment 3. Monitoring

1. Capture:

Approximately 115 to 165 jennies would be captured by the BLM, assigned to a treatment group, treated as appropriate for each group (explained below), and released back into the Black Mountain HMA. Capture methods would only include bait traps. Traps would be approximately 1,200 square feet in size and constructed using portable metal panels (5 feet high) with a one-way gate where burros would be enticed into a corral. Water, weed free alfalfa hay and/or other attractants would be used. Bait traps would be located strategically throughout the Black Mountain HMA in places where normal burro movements occur south of Highway 68 (see Table 2). Trapping could occur year round; however, ideal bait trapping months have been identified as November through December and June through August, depending on seasonal rainfall.

Unhabituated jennies captured between the ages of 2 years old and 15 years old would be immediately transported to the Kingman Wild Horse and Burro Short Term Holding Facility or to a temporary holding facility near the trap site. If a jenny has a nursing foal, the foal would be transported to the Kingman Facility and kept with its mother (more specific data is available in the Wild Horse and Burro Section 3.4.8). Burros would be immediately marked at the trap site or upon arrival at the staging area of the Kingman Facility with a temporary livestock marking paint to determine jenny/foal pairs and trap site capture location.

Of the jennies to be studied, approximately 15-25 habituated jennies would be located in and around the town of Oatman, AZ (Figure 3). Jennies in Oatman, AZ may not require capture, but would be classified in terms of identification, vaccination, and data collection. The BLM has no intentions of freeze marking the Oatman burros. However, for the purposes of maintaining the accuracy of the data, freeze marking a habituated burro may be necessary (i.e., one without readily distinguishable characteristics). If it is determined by the BLM a habituated jenny needs to be freeze marked, she and her foal (if applicable) would be captured and transported to the Kingman corrals. The jenny would receive the freeze mark and afterward they would be returned immediately to the Oatman area.

Table 2. Bait Trap and Bait Station locations.

Trap site Name	Trap site location	Bait Station Identified	Bait Station Location
Gas line (private)	35° 1'55.85"N 114°17'3.98"W	Gas line (private)	35° 1'55.85"N 114°17'3.98"W
Corner corral(BLM)	35° 5'54.16"N 114°16'52.16"W	Corner corral(BLM)	35° 5'54.16"N 114°16'52.16"W
Twin Springs(BLM)	35° 2'5.12"N 114°18'40.96"W	Twin Springs(BLM)	35° 2'6.61"N 114°18'44.85"W
		Gold Road Well (PRVT) (Flowing well)	35° 1'14.63"N 114°18'21.97"W
Possible trap site Pullout (BLM)	35° 2'14.44"N 114°20'54.08"W	Pullout(BLM)	35° 2'14.44"N 114°20'54.08"W
Silver Creek(BLM)	35° 4'50.07"N 114°26'17.15"W	Silver Creek(BLM)	35° 4'50.07"N 114°26'17.15"W
Possible Bait trap (Hwy. 68 Gravel Pit)	35°13'20.20"N 114°21'2.42"W	Hwy. 68 Gravel Pit	35°13'20.20"N 114°21'2.42"W
Potential trap site (Thumb Butte) (BLM)	35°10'27.31"N 114°26'2.26"W	(Thumb Butte) (BLM)	35°10'25.92"N 114°26'4.48"W
Oatman Trap site(PVT)	35° 1'28.88"N 114°22'55.49"W	Oatman	35° 1'28.88"N 114°22'55.49"W
Oatman South 1 Trap site(BLM)	35° 0'15.05"N 114°23'37.75"W	Oatman South	35° 0'15.05"N 114°23'37.75"W
Oatman South 2 trap site (BLM)	35° 0'19.09"N 114°24'10.57"W	Oatman South 2	35° 0'19.09"N 114°24'10.57"W
Boundary Cone Trap site	34°59'39.01"N 114°24'2.33"W	Boundary Cone	34°59'39.01"N 114°24'2.33"W
Hidden Valley Trap site	35° 2'22.33"N 114°20'32.90"W	Hidden Valley	35° 2'22.33"N 114°20'32.90"W
Lower Baker Trap site	34°59'50.47"N 114°16'13.49"W	Lower Baker Trap site	34°59'50.47"N 114°16'13.49"W
		Upper Ed's camp	35° 2'0.24"N 114°20'49.06"W

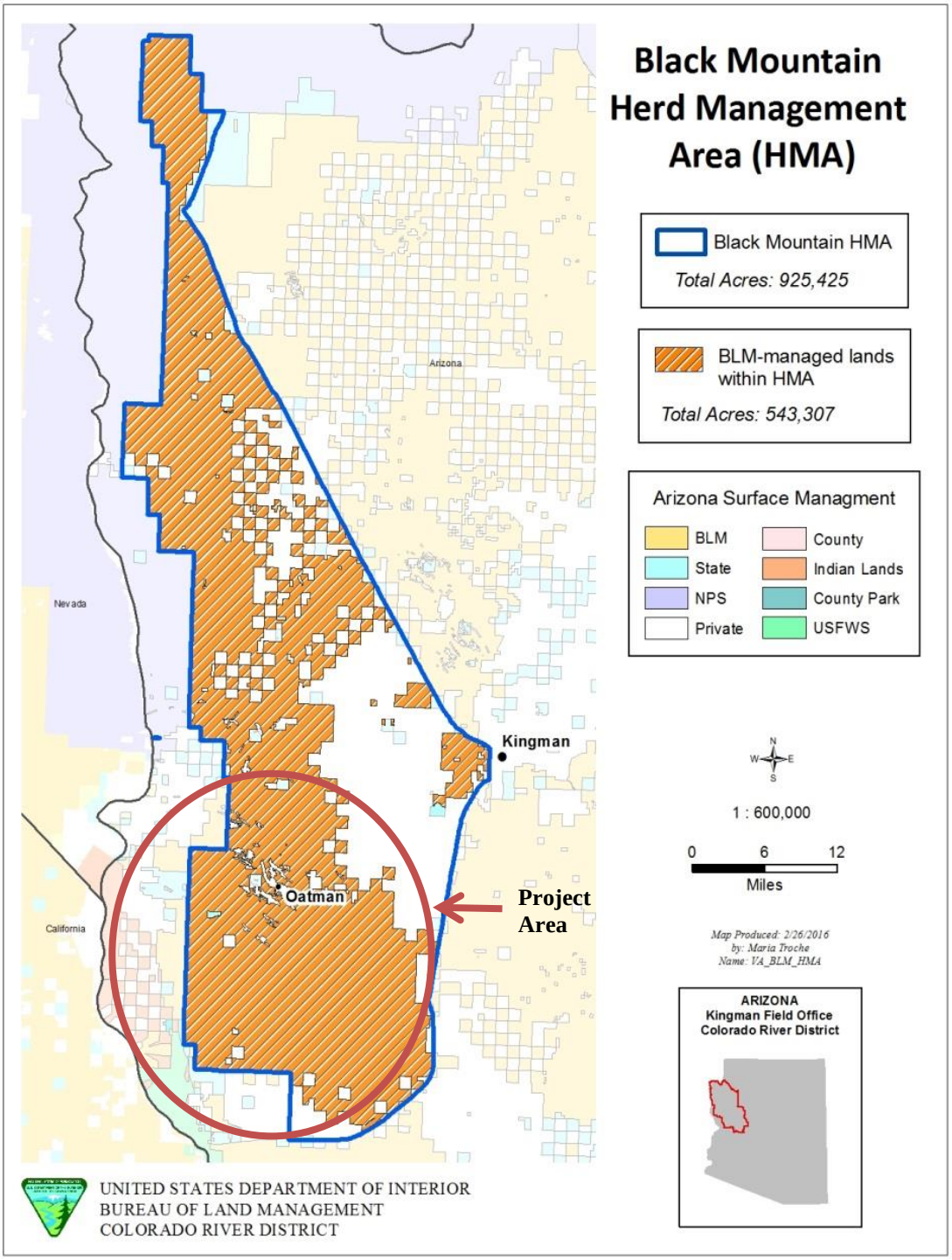

Figure 3: BLM managed lands and Oatman, AZ within the Black Mountain HMA

All capture operations would be in accordance with WO Instruction Memorandum 2015-151, Comprehensive Animal Welfare Program for Wild Horse and Burro Gathers (see Appendix B) (Also available at: http://www.blm.gov/wo/st/en/info/regulations/Instruction_Memos_and_Bulletins/national_instruction/2015/IM_2015-151.html).

Potential bait trap areas and bait stations are listed in Table 2. Efforts have been made to locate traps in previously disturbed areas (i.e., turn-a rounds, bladed areas, etc.) and/or areas such as wash bottoms. Since burros have the ability to move freely about the HMA, additional trap locations may need to be identified in areas that are currently occupied by burros. Traps may be placed on private land provided written permission is granted in advance by the land owner. Bait trap and bait stations would be culturally and biologically cleared and have approval prior to use.

2. Treatment:

Jennies treated (including those in the control group) would be no younger than 2 and no older than 15 years old and would have a Henneke body score of no less than 4 (see Appendix C). Four randomly assigned wild jenny treatment groups (A, B, C, and D) would be established. Group A would remain unvaccinated and would serve as a control group. Groups B, C, and D would be vaccinated with ZonaStat-H PZP.

The four groups, and a summary of their treatments, are shown in the following table:

Table 3: Group Criteria

Group	Description[1]	Number	Freeze-Mark[2]	Treatment	ID[3]/Released	Boostered
A	Unhabituated	30 - 40	Yes	None-Control Group	After ID	None-Control Group
A	Habituated	5 - 10	Unlikely [2]	None-Control Group	After ID	None-Control Group
B	Unhabituated	35 - 50	Yes	Yes	Held 2 weeks after ID at Kingman Holding Facility for booster	Yes, then released at capture site
C	Unhabituated	35 - 50	Yes	Yes	After ID	Yes, remotely when found in 2 weeks to 6 months
D	Habituated	15 - 10	Unlikely [2]	Yes	After ID	Yes, remotely when found in 2 to 6 weeks

1 Habituated jennies would be located in and around Oatman, AZ

2 Jennies would not be freeze marked unless determined by the HSUS and the local BLM Wild Horse and Burro Specialist that identification is needed.

3 ID (Identification) includes: being photographed and cataloged for later identification and would also include having hair samples collected, so that a subset of samples could later be subject to genetic analyses. Catalog information would include either visual description (for applicable jennies in Group A and D) or animal three digit freeze mark identification number (for remaining jennies), capture date, age, capture method, location, vaccination date, batch number, delivery method, number of animals in group, body condition, and observations of overall health.

Year 1

All jennies in Groups A, B, and C would receive a unique numerical number (001-150): i.e., Group A (001-050), Group B (051-100), Group C (101-150). The three digit numeric number would be freeze marked on each individual female. The unique identifying number would be placed on both hips so they may be observed at greater distances, allowing the observer to identify the animal by looking at its left or right side and to facilitate data collection. Freeze marking both sides of the animal is also important in the event one side is blotched or unreadable. This number will only serve as an animal identification number per Arizona SB 1344 (Laws 2016, Chapter 160, found at http://www.azleg.gov/legtext/52leg/2r/laws/0160.pdf).

All jennies would be photographed and cataloged for later identification and would have hair samples collected, so that a subset of samples could later be subject to genetic analyses (per BLM H-4700-1 Appendix 1: Genetics Data and Hair Sample Collection Instructions). The intent is that no less than 25% and no more than 100 burros (males and females) captured would be sampled in the subsets for genetic sampling.

Identification criteria would include: animal three digit identification number (except for jennies in Group D), capture date, age, capture method, location, vaccination date, batch number, delivery method, number of animals in group, body condition, and observations of overall health. Oatman burros (Group D: 151-165) would be identified by other distinguishing characteristics unless it is determined they need a freeze mark as mentioned above.

Vaccination with ZonaStat-H PZP would follow BLM Standard Operating Procedures for Animal handling (WO Instruction Memorandum 2015-151, Comprehensive Animal Welfare Program for Wild Horse and Burro Gathers). Treated jennies would receive a primer treatment that consists of the ZonaStat-H PZP mixed with Freund's Modified adjuvant. A booster dose which is composed of the ZonaStat-H PZP and Freund's Incomplete adjuvant would be given within 2 weeks to 6 months, depending upon the jennies treatment group. Initial treatments would be delivered by hand-injection in the corral and/or in the field, depending upon their Group Criteria. Booster treatments may be delivered by hand-injection or darting in the field.

Throughout the project, if it is determined that any jenny cannot be approached within a safe and effective darting range by foot to administer the booster vaccinations via opportunistic darting, then baiting (not trapping and/or capturing) would be attempted. Bait could include salt, mineral, or weed free hay in areas that the burros utilize during their normal movements throughout the HMA. Because darting is the primary delivery method for administering the ZonaStat-H PZP booster in this alternative, bait trapping would not to be relied upon for booster delivery, except under rare circumstances and at the discretion of the local Wild Horse and Burro Specialist.

Years 2, 3 and 4

Approximately 8 months from the time of the first booster shot, the second booster shot would be initiated. Attempts would be made to apply annual booster doses to all previously treated wild and free roaming jennies in the field for the remaining length of the project. This would be accomplished via remote darting at bait traps, bait stations, or opportunistically 8-12 months after their last booster. It is assumed that some jennies vaccinated in Groups B, C, and D might not be located in years 2, 3, and/or 4 for their annual boosters. In the event that a specific jenny is not located in accordance with the experimental timeline, boostering would be performed at the time they are located. All treatment and health data would be recorded as per the Data Sheet

provided in Appendix D. Data Sheets would be prepared and maintained by the HSUS. Initially, copies of the data sheets would be sent to the National Wild Horse and Burro Program Office and to the Science and Conservation Center (SCC). Thereafter, booster treatment updates and annual progress would be sent annually. Any significant changes or unexpected problematic issues would be immediately reported to the local Wild Horse and Burro Specialist.

As noted in Year 1, for the remaining three years of the project, if it is determined that any jenny cannot be approached within a safe and effective darting range by foot to administer the booster vaccinations via opportunistic darting, then baiting (not trapping and/or capturing) would be attempted. Bait media could include salt, mineral, or weed free hay in areas that the burros utilize during their normal movements throughout the HMA. However, if it is determined that the burros cannot safely be darted remotely by utilizing baiting into a bait station, burros may, in rare circumstances, be re-trapped and/or re-captured at the discretion of the local Wild Horse and Burro Specialist. Re-trapping is expected to be rare but may also be necessary during the project to re-administer a freeze-mark identification number on the hip (e.g., if the existing freeze mark is blotched or completely illegible), or to allow veterinary treatment of a visible abscess at the injection site.

The Proposed Action incorporates the following actions and management requirements:

- Burro Immunocontraception Data Sheets would be prepared and updated as previously mentioned in Appendix D.

- The fertility control treatment would be conducted in accordance with the approved Standard Operating and Post-treatment Monitoring Procedures (SOPs) as presented in Appendix E.

- ZonaStat-H PZP mixing procedures would follow those listed in Appendix F. The ZonaStat-H PZP protocol would be examined annually, and made to comply with any new instructions provided by the SCC.

- ZonaStat-H PZP would be administered in the one year liquid doses, start as early as 2016, and go through four full calendar years until the entire length of the project has been completed.

- The ideal time to booster treated jennies would be within two to six weeks after receipt of the initial vaccination. Subsequent booster vaccination would occur 8-12 months later over the course of the four year project. However, if a booster vaccination is missed during a given year, the booster shot could be administered at any time as soon as the jenny is located. Each jenny would have an identification sheet including photographs and a description of distinguishing markings. Each jenny would receive an identification number that would correlate with her unique freeze mark(s). A data sheet (Appendix D) will be maintained on each jenny documenting her treatment schedule, treatment location, reactions, etc. That information would be loaded into a data base in a format that is easy to use in the field (book or electronic device).

- Adjustments would be made if it is found that there is a severe reaction by an individual jenny. Any adverse reactions or affects would be reported immediately to and evaluated by the local BLM Wild Horse and Burro Specialist, and a local veterinarian if deemed necessary. Further course of action would be determined at that time. This information would be documented on the Data Sheet in the Data Base.

- The treatment schedule and data sheets would be reviewed/approved by the local Wild Horse and Burro Specialist over the length of the project. An annual progress report would be submitted to the local Wild Horse and Burro Specialist, by the HSUS, and filed with the HMA records. This progress report would show all ZonaStat-H PZP orders placed with the associated

costs, planned treatment schedules with the actual treatments (number/dates of jennies treated), reports for unrecovered or lost darts, negative reactions and BLM action(s) taken for that jenny, the number of new/current year foals counted/observed for project animals along with notations for any unique circumstances, general rangeland condition/water availability, significant logistical or procedural correspondence between/among KFO, the HSUS, SCC, and National Wild Horse and Burro Program Office along with other pertinent information.

Field darting would be conducted in an opportunistic manner while the specialist and the HSUS are conducting routine monitoring activities as part of normal duties in the field. Ordinarily, field darting activities would be conducted on foot. Access throughout the HMA would be achieved by the use of 4x4 vehicles and other off-highway vehicles (OHVs) or horses. Vehicles would be utilized on existing roads and trails in the HMA. Personnel authorized for field darting of the burros must be trained and certified by the SCC in Billings, Montana.

Additionally, all work would be conducted in accordance with the SOPs (Appendix E) and mixing procedures (Appendix F). The HSUS would be responsible for providing the ZonaStat-H PZP adjuvant and vaccine. The HSUS will work with the SCC in Billings. Each dose would consist of 100 micrograms of ZonaStat-H PZP in 0.5 cc buffer (a phosphate buffered saline solution). Mixing the vaccine and the adjuvant would be accomplished as described in the Wild Horse Contraceptive Training Manual (mixing procedures in Appendix F). Remote application would be by means of 1.0 cc Pneu-dart darts, with either 1.25 or 1.5 inch barbless needles, delivered by either Dan-inject or Pneu-dart CO^2 powered or cartridge fired guns.

Attempts would be made to recover all darts (normally about a 94.6 % recovery is expected, Kirkpatrick 2008). HSUS would be applying adaptive management principles. If policies change or the vaccine effects or effectiveness prove undesirable, then the application of the ZonaStat-H PZP fertility control measures would be stopped or reconsidered, based on new scientific information.

- Jennies would be individually marked and/or be individually recognizable without error. No jenny would be treated (with a booster dose) after initial treatment unless her identity is verified.

3. Monitoring:

Monitoring of the jennies would be completed by the HSUS throughout each of the years using ground observations (shown below) following the jennies first capture and initial treatment. Analysis of the monitoring results, also completed by the HSUS, would continue throughout the four year study. Observations would be made by the BLM to document the return of fertility for jennies that were included in this four year project following its completion.

The direct effects of individual jennies' reproduction, health, and group dynamics will be recorded. The conception rate between the treated and control groups would be determined and statistically compared.

Ground observations would be implemented using the following criteria:

- Observations would be made from a vehicle on existing roads, trails, and washes, or from hiking and/or riding horse-back across country.
- Observations would be carried out by one or two observers throughout the year.
- Observations would be made visually, with binoculars, spotting scope or remote triggered (i.e., game) cameras.

- Attempts will be made 12 months out of every year over the course of the project to obtain multiple observations of individual jennies' included in this project. The number of observations of individual jennies' may vary according to the difficulty of locating different animals with different habits.

Flight surveys are not expected to be conducted because of the expense involved in conducting them and the difficulty in locating specific burros from the air. Additional observations may be obtained however, i.e., sighting of burro herds, etc., during routine aerial surveys (population estimates) conducted by the BLM and AZ Game and Fish Department.

All tasks are to be completed by employees, contractors, and/or supervised volunteers of the HSUS and BLM.

Mitigation and monitoring are incorporated into the Proposed Action and also through Standard Operating Procedures (SOPs), which have been developed. The Burro Immunocontraception Data Sheet (Appendix D) tracks individual jennies' information including: number, color, other markings/brands, inoculation dates & doses, delivery systems, injection sites, reproductive history, location and health issues. The SOPs (Appendix E) and mixing protocol (Appendix F) represent the best methods currently known for reducing impacts associated with remote application of ZonaStat-H PZP and collecting animal data.

The information collected from this project is expected to provide BLM data and analyses that would quantify the logistical feasibility of delivering ZonaStat-H PZP remotely to wild and free roaming jennies on public lands, and would quantify its contraceptive effectiveness in burros.

2.2 No Action Alternative

The No Action Alternative is required by the NEPA to provide a baseline for impact analysis. Under this alternative, wild and free roaming burros would not be gathered and treated with the ZonaStat-H PZP and/or studied over a four-year time frame by the HSUS within the Black Mountain HMA.

Other proposals could be made to the BLM for fertility studies with similar treatment by the HSUS or other organizations at a later time.

CHAPTER 3 - AFFECTED ENVIRONMENT

3.1 The Affected Environment

The Black Mountain HMA is in extreme northwestern Arizona, west of Kingman (Figure 1) and occupies the western third of Mohave County. The area parallels the eastern shoreline of the Colorado River for approximately 80 miles, from Hoover Dam on the north end to Interstate 40 on the south end. The Black Mountain HMA is the largest HMA in Arizona, with about 925,000 acres of Mojave Desert shrub and Grand Canyon desert shrub.

This geographic province is primarily formed from volcanic origin, mostly basalt, and is characterized by large mesas, steep cliffs, slopes, rocky foothills, alluvial fans, and sandy washes. The highest point in this range is Mount Perkins at 5,456 feet. The average elevation of the Sacramento Valley to the east is 2,000 feet. The Mohave Valley to the west is much lower, with the Colorado River flowing at an average elevation of 540 feet. The climate is warm, windy

and dry, with summer temperatures exceeding 120 degrees Fahrenheit and winter temperatures as low as 25 degrees Fahrenheit or less. Along the Colorado River, the area receives approximately three inches of rainfall per year and at the higher peaks as much as 12 inches of rain annually.

Initial trapping efforts for wild and free roaming jennies would be limited in the Black Mountain HMA to the area south of Highway 68 (see Figure 3) where the largest concentrations of burros are, according to the 2014 population estimate "Estimated Abundance of Wild Burros Surveyed on Bureau of Land Management Lands in 2014," (Griffin 2014). However, after the initial trapping efforts, there is no guarantee that treated burros would not cross into other portions of the HMA, including those north of Highway 68.

Two wilderness areas (Mt. Nutt and Warm Springs) exist within the project area boundaries. Combined within them are rugged topography and a wide variety of animals that live there year round, including the largest herd of desert bighorn sheep on public lands in the nation (Website source: http://www.blm.gov/az/st/en/prog/whb/hmas/blk_mtn.print.html).

3.2 Reasonably Foreseeable Activities (RFAs)

New developments may occur within the Black Mountain HMA over the next five years. Providing transparency in forecasting without being too speculative is difficult; however, the KFO IDT submits the following regarding RFAs as they pertain to the Proposed Action:

Climate Change

The BLM Washington Office recommends that EA's include climate change in their reports for long-term outcomes. The short-term project life in this EA begins when jennies are treated in Year 1 (expected if approved in FY 2016 or 2017) and long-term could be considered when the jennies return to their "normal fertility" (i.e., resume foaling after Year 4 of the project; possibly FY-2020 or 2021). The Mojave Basin and Range Rapid Final EcoRegional Assessment (MBR REA) (Comer 2013), that is applicable to the planning area for this project, refers to short-term in year 2025, mid-term as 2040, and long-term refers to 2060. Climate change conditions mentioned in the MBR REA that could affect burros include:

- longer drought periods
- potential for invasive species to spread into the area, with a subsequent risk for increased fire-regime alteration into previously unburned desert scrub (i.e., from lightning strikes in HMA)
- higher than normal summer temperatures across the landscape
- more intense storms

Any of the above impacts could cause burros to relocate to different areas within the HMA.

Black Mountain Herd Management Area Environmental Assessment. Scoping was conducted in April of 2015. Upon the completion of the ZonaStat-H PZP EA, the KFO will resume working on the Black Mountain HMA EA, which is expected to be completed in FY 2017. Analysis in it is expected to include existing and desired conditions of the Black Mountain HMA. Issues addressed would include burro population numbers above the HMA AML, AML range, alternatives proposed both internally (from the BLM IDT) and those received from other sources, such as interested public, other agencies, etc.

Human Population Growth

The Arizona Department of Administration Employment and Population Statistics Division, using a medium growth modeling exercise, estimated in their December 7, 2012 report that Mohave County will increase in population 13% over 212,805 by 2020 (to 240,998) and by 24% in 2025 (to 264,143). The projected increases are expected to equate with more users recreating on public lands in many different forms of multiple-use.

Projects being developed with regard to population growth (i.e., lands/realty right-of-way requests; transportation corridor applications, etc.) would be analyzed when more information is available.

Colorado District Office Allotment Range Improvements Requests

Rangeland improvement requests with permit renewals could be submitted within the Black Mountain HMA during the Proposed Project and would need to be analyzed through NEPA at that time.

3.3 Cumulative Effects

Cumulative effects are those that occur from the incremental impacts of the Proposed Action that are added to other past, present, and reasonably foreseeable actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can also result from individually minor but collectively significant actions taking place over a period of time (40 CFR § 1508.7). Activities that can occur when bait trapping or monitoring the burros being studied include:

- BLM-related activities (nuisance and/or burro gathers; monitoring; burro population estimates; vegetative and wildlife habitat improvement projects; invasive, non-native species control efforts; fire management activities to reduce the threat and impact of wildfire ((e.g., fuel reduction projects), etc.) including fighting wildfire(s);
- Recreational activities: wildlife viewing, hunting, camping, commercial special recreation permits for hunt guiding, and vehicle tours etc.;
- Public forms of multiple-use (gaining access to/from private or public lands) across the project area;
- Maintenance forms of multiple-use (utility companies maintaining power lines and pipelines on existing right-of-ways, lands/realty surveys, etc.);
- Mineral exploration, extraction, and/or development; and
- State/county services (weed eradication; invasive, non-native species control efforts; highway maintenance, etc.)

If the Proposed Action conflicts with any of the above mentioned activities, HSUS personnel and the BLM would address them as they are identified and take appropriate actions and/or develop mitigation measures to ensure the safety of the public, the burros, and the managed lands.

3.4 Resources Analyzed

The table below (Table 4) lists each of the resources and their appropriate section. Resources not present are indicated with an "x" and are not discussed further in the document. Resources that are present, but that are not expected to receive impacts are also indicated with an "x" along with a brief rationale as to why they will not be analyzed further in the document. Resources analyzed are indicated with an "x" and the section is shown where the analysis is provided.

Table 4: Resources Analyzed

Element /Resource	Not Present	Present, NOT Affected	Rationale for Non-Analysis	Present and Potentially Affected	Analyzed in Section
A C E C	☐	☐		X	3.4.2
Access	☐	☐		X	3.4.7
Air Quality	☐	X	Air quality is not expected to be impacted by the number of times the roads are traveled to access the jennies over the four-year project.	☐	
Aquatic Species	X	☐		☐	
Birds of Conservation Concern and BLM Sensitive Species	☐	☐		X	Animals 3.4.11 Vegetation 3.4.8
Climate Change	☐	X	Changes in climate (temperature or precipitation) are not expected to impact the project.	☐	
Cultural Resources	☐	☐		X	3.4.3
Energy (Oil/Gas)	X	☐		☐	
Environmental Justice	X	☐		☐	
Farm Lands – Prime/Unique	X	☐		☐	
Fire Management	☐	X	Pilot Project is not expected to impact Fire Management. In the event of a wildfire burros may be temporarily displaced from a particular location and would be expected to return when annuals reappear. Project personnel may temporarily be restricted from areas impacted by wildfire	☐	
Floodplains	X	☐		☐	
Forestry and Woodland Products	X	☐		☐	
Grazing/Rangelands	☐	☐		X	3.4.7
Human Health and Safety	☐	☐	Also review wild horse and burro section which explains amino and protein composition of ZonaStat-H PZP	X	3.4.5
Lands/Realty	☐	X	Lands/realty actions will not be impacted by the proposed actions of the four-year project.	☐	
Migratory Birds	☐	☐		X	3.4.11
Mining/Minerals	☐	X	Mining/Minerals actions will not be impacted by the proposed actions of the four-year study.	☐	
Native American Traditional Values	☐	☐		X	3.4.6
Non-Native, Invasive and Noxious Species	☐	☐		X	3.4.8
Rangeland Health (HFRA)	X	☐		☐	
Recreation	☐	☐		X	3.4.7
Socio-Economics	☐	X	The Proposed Action would not impact socio-economics of the project area.	☐	
Soils	☐	☐	Analysis included in vegetation.	X	3.4.8
Threatened or Endangered (T&E), Proposed, or Candidate Species, or Critical Habitat	X	☐	There would be no affect to T&E, Proposed, or Candidate Species, or to Critical Habitat as none are found in the project area.	☐	
Vegetation	☐	☐		X	3.4.8
Visual Resources	☐	X	The project would not impact Visual Resources	☐	

Table 4 (Resources Analyzed – Continued)

Element/Resource	Not Present	Present, NOT Affected	Rationale for Non-Analysis	Present and Potentially Affected	Analyzed in Section
Waste – Hazardous or Solid	x	☐	Review wild horse and burro section which explains amino and protein composition of ZonaStat-H PZP	☐	3.4.9
Water Quality (Surface/Ground)	☐	x	The project would not impact Water Quality (Surface/Ground)	☐	
Wetlands/Riparian	☐	x	The project would not take place in riparian areas therefore no impacts would occur to riparian resources.	☐	
Wild & Scenic Rive	x	☐		☐	
Wild Horses & Burros	☐	☐		x	3.4.9
Wilderness	☐	☐		x	3.4.10
Wildlife	☐	☐		x	3.4.11

Explanation of Layout for Resources Analyzed for Readers of This EA:
The following sections are for the resources analyzed because they are ***present in the boundaries of the Project Area and impacts are expected***. Each section has the following categories:

- Affected Environment (Provides *Past and Current Conditions* for the Resource, and assists the reader in understanding how the environment "came to be" in its current condition.)
- Environmental Impacts (Describes *Direct and Indirect Impacts;* enables the reader to understand the expected short- and long-term impacts of the Proposed Action)
  1) **Environment Impacts from the Proposed Action Alternative, and**
  2) **Environment Impacts from the No Action Alternative**
- Cumulative Effects Analysis (Includes impacts from above along with addition of: Reasonably Foreseeable Activities and predicted impacts that could occur when considering cumulative impacts from other activities if they are ongoing or occurring in the project area).
  3) **Cumulative Effects from the Proposed Action Alternative, and**
  4) **Cumulative Effects from the No Action Alternative**

3.4.1 Impacts and Effects Common to All Resources

To eliminate redundancy, the following are comments are offered and apply to all natural resources:

Environmental Impacts from the Proposed Action Alternative

The information collected from this project is expected to provide BLM data and analyses that would quantify the logistical feasibility of delivering ZonaStat-H PZP remotely to wild and free roaming jennies on public lands, and would quantify the extent to which the contraceptive is effective in burros.

Although the use of ZonaStat-H PZP has proven to be successful in horses, results needed from this project need to show that (1) remote delivery of ZonaStat-H PZP is logistically feasible to wild and free roaming jennies on public lands, and (2) that its contraceptive effectiveness is

quantified in burros. With both conditions satisfied, there is the potential for BLM to manage the number of burros on the landscape more effectively than it can today.

In the short-term (5 years) the subset of jennies treated are not expected to impact land health positively or negatively more so than what is already occurring on the land.

Environmental Impacts from the No Action Alternative

Under the No Action Alternative, tools available to BLM for managing the burro populations within the Black Mountain HMA, i.e., using gathers for removal, would remain the same. BLM could not quantify the logistic feasibility of delivering ZonaStat-H PZP remotely in the field and could not quantify its contraceptive effectiveness in burros.

In four (4) years if the burro population is not managed, there could be as many as 3,350 burros in the Black Mountain HMA. This number was calculated using 1,675 burros as a starting population. The starting population was an average rounded number by USGS in their report for what is cited as being on the HMA today (between 1,517 and 1,827) (Griffin 2015). The number was then doubled to account for the population growth that can occur every four years as shown in Figure 2. An increase in the burro population could also lead to a higher number of burro-human traffic related accidents and/or mortality, etc., and/or expansion of wild burros to areas outside the HMA.

Under this scenario, impacts to ecological health could be negative for several natural resources throughout the Black Mountain HMA (i.e., ACEC, cultural, soils, vegetation, and wilderness). Additionally, wild burros in excess of AML with limited management options would be expected to lead to continued competition for resources by ungulates within the Black Mountain HMA.

It is expected that searches for new research and population control methods would continue.

Cumulative Effects from the Proposed Action Alternative

Indirect impacts of the Proposed Action where effects could occur include areas used as bait traps and bait stations, such as in causing delays to vegetation that has been recovering naturally from past disturbance (i.e., in previously disturbed sites) and/or in areas where previously undisturbed vegetation disturbance occurs in newly selected trapping and bait locations.

Over the very long-term (20 years or longer), if the results of the project are found to be effective in reducing jenny fertility rates (through extrapolation), there could be the potential for a reduction in competition for forage resources between ungulates (desert bighorn sheep, cattle, and burros). The resulting effect could be improved ecological health. Improved ecological health could indirectly increase the habitat/vegetative productivity (forage and cover) for all species of animals and plants found throughout the Black Mountain HMA.

Cumulative Effects from the No Action Alternative

Without implementation of the Proposed Action as suggested by HSUS, BLM would be limited to its current management tools (i.e., removals). Studies and research could continue.

Gathers and removals places more burros into short-holding facilities, which increases the number of burros that need to be adopted and/or that need to be maintained in the facilities.

Increasing burro population numbers in the HMA could result in additional user conflicts for the various forms of multiple-use.

3.4.2 Area of Critical Environmental Concern (ACEC)

Affected Environment

The Black Mountain Area of Critical Environmental Concern is a block of approximately 218,056 acres. It was established by the Kingman RMP to better protect the diverse resources within its boundaries by balancing competing uses. An ACEC affords an area less protection than wilderness designation, but more protection than is afforded public lands in general (BLM 1996).

The project area is located south of SR 68 and would occur on less than a third of the ACEC. The goal of the ACEC is "To maintain balanced resource development while providing for public demand and sensitive resource needs." The ACEC also affords protection and enhancement for special status species habitat, cultural resources, and to maintain wilderness values and characteristics.

ACEC objectives pertinent to the Proposed Action are as follows: 1) Improve and maintain habitat while providing for the needs of wild burros, desert bighorn sheep, other wildlife species and livestock; 2) Protect and improve Cerbat beard-tongue (*Penstemon bicolor rosesus)* habitat; 3) Minimize conflicts and balance uses among grazing and browsing animals; and 4) Promote opportunities for scientific research of ecological and cultural resources (BLM 1995).

Environmental Impacts from the Proposed Action Alternative

During trapping operations no impacts are expected to occur in previously disturbed areas. If additional trap sites, bait stations, or temporary holding facilities are identified during the project in the ACEC, and they are in undisturbed areas, then impacts could occur. The installation of temporary corrals and the concentration of burros and/or cattle in previously undisturbed ACEC areas could crush and trample vegetation at these locations (Also refer to Common to all Alternatives [above] and Vegetation Resources 3.4.7). Mitigation measures require that all new trap sites, bait stations, and temporary holding facilities would be biologically and culturally cleared prior to use.

Treatment and monitoring activities, which would consist of hiking or riding horseback in the ACEC or driving on existing roads, trails, and washes, are not expected to affect the ACEC.

The Proposed Action falls within the ACEC objective of promoting opportunities for scientific research of ecological resources in the ACEC.

Environmental Impacts from the No Action Alternative

Under the No Action Alternative, no impacts would be expected to occur to the ACEC. The No Action alternative does not support BLM with implementing the ACEC objective of promoting opportunities for scientific research of ecological resources in the ACEC. Under the No Action Alternative, BLM would not study the effects, effectiveness, and practicability of using ZonaStat-H PZP on wild burros.

Cumulative Effects Expected from the Proposed Action Alternative

As stated in Common to All Alternatives (above), an improved ecological land-health would help the BLM meet the ACEC objectives to 1) Improve and maintain habitat while providing for the needs of wild burros, desert bighorn sheep, other wildlife species and livestock, 2) Protect and improve Cerbat beard-tongue habitat, 3) Minimize conflicts and balance uses among grazing and browsing animals, and 4) Promote opportunities for scientific research of ecological and cultural resources. Under this Proposed Action effects would be minimal.

Cumulative Effects Expected from the No Action Alternative

See Common to All Alternatives (3.4.1)

3.4.3 Cultural Resources and Paleontology

Affected Environment

The project area includes a diverse assortment of significant cultural resources. Typical prehistoric sites include rock shelters, habitation and processing sites, petroglyphs and pictographs, lithic scatters, and ancient trails. Due to the arid climate, both prehistoric and historic occupation sites are often located near active seeps and springs. Important historic sites include the Beal Wagon Road, several stone cabins dating to the early 1860's along Silver Creek Road, and remnants of numerous 19th Century mining sites. Little archaeological inventory has been conducted in the area so the exact density and distribution of cultural resources remains largely unknown.

Environmental Impacts from the Proposed Action Alternative

The project would install temporary corrals using free standing gates and support stakes for trapping burros. Bait/trap stations will be accessed using existing roads. Although minimal ground disturbance is expected from the installation of the traps, some surface disturbance is expected from animal trampling due to the concentration of ungulates at the trap sites. Where possible, traps will be located in areas that have been previously disturbed, such as bladed areas, existing pull-outs, and wash bottoms. Stations that are located at previously disturbed sites or in desert wash areas are not expected to affect cultural resources. Proposed trap and bait station locations are previously shown in Table 2. Any trap stations that cannot be positioned in disturbed areas, or in areas that have previously undergone archaeological survey will be surveyed for cultural resources by a qualified archaeologist prior to use. If cultural resources are discovered during the survey and the proposed activities have the potential to affect these resources, an alternative suitable trapping site would be selected in an area without the potential to impact cultural resources. Any potential trap sites found to contain cultural resources would not be used. If cultural resources are discovered during the trapping process at the capture sites, trapping would immediately cease and the appropriate personnel would be notified.

Trap sites would be limited to existing disturbed areas or areas that have been surveyed and determined to be void of cultural resources. Collection and disturbance of cultural resources would be prohibited in the Proposed Action and therefore, there would be no expected impacts to cultural resources.

See Impacts and Effects Common to All Alternatives (3.4.1) expected for remaining direct, indirect and cumulative impacts.

3.4.4 Grazing and Rangeland Health

Affected Environment

The only grazing allotment directly affected by the Proposed Action is the Black Mountain Allotment. This allotment borders the south side of Highway 68 and spans from the edge of Golden Valley into the Detrital Wash area with natural topography as a southern boundary north of Warm Springs. The western boundary of the Black Mountain Allotment contours the ridge line from south to north and is approximately one mile east of Oatman, Arizona. The Black Mountain Allotment currently has a stocking rate of 105 Animal Units (AU) and is currently being stocked at that rate year round.

Environmental Impacts from the Proposed Action Alternative

Under the proposed four-year field project, burros could be captured using bait traps in temporary corrals. Livestock on the Black Mountain Allotment could be affected by bait trapping activities since cattle would likely be attracted to the bait trap areas because of the alfalfa hay.

Livestock could potentially be caught in these traps. The intensity of impacts would vary by individual and could be indicated by behaviors such as nervous agitation. Impacts to cattle are expected to be minimal. Bait traps will be visited twice daily. Communication and locations would be coordinated between BLM and the permittee to determine the process(es) for releasing cattle from traps.

Environmental Impacts from the No Action Alternative

See Common to All Alternatives (3.4.1)

Cumulative Effects Expected from the Proposed Action Alternative

Trapping of burros under the proposed four-year project along with normal trapping activities for nuisance burros may increase the number of cattle caught in bait traps over time.

Cumulative Effects Expected from the No Action Alternative

See Common to All Alternatives (3.4.1)

3.4.5 Human Health and Safety

Affected Environment

The project area contains a variety of users and forms of multiple-use. The Proposed Action will occur at the same time public are performing their desired form of multiple-use in the Black Mountain HMA.

Environmental Impacts from the Proposed Action Alternative

At any time, users may encounter activities associated with the Proposed Action in the Black Mountain HMA. The presence of HSUS and/or BLM personnel could provide an opportunity for public education and outreach. Predicted outcomes could be positive and/or negative. Positive outcomes could depend upon whether the HSUS and BLM operation personnel have the time to engage with the public. Negative outcomes could depend on whether the public agrees with needing to be kept within a safe distance from the ongoing activities (see next paragraph).

Wild and free roaming burros are not used to human contact and can be easily startled. Anticipated reactions, based on previous interactions with BLM staff include burros attempting to bite, kick, or to run at humans. To minimize this risk for public, on days when project operations are ongoing, BLM could set up a public observation site at a safe distance from the bait trapping area. The utilization of such observation areas is necessary due to the use and presence of field equipment, darting supplies, supplies of ZonaStat-H PZP, and the critical need to allow BLM/HSUS personnel and/or associated contractors to fully focus on the needs of the wild burros or cattle that may be involved near the trap. In addition, the observation sites would help to minimize any animals from being startled or impacted in a manner that results in increased stress.

No effects to human health and safety are expected as a result of the burros being darted because SOP's instruct operation personnel to take several precautions with regards to any darting of burros where public could be at risk.

Environmental Impacts from the No Action Alternative

No Effect is expected to Human Health and Safety is the No Action Alternative is implemented.

Cumulative Effects Expected from the Proposed Action Alternative

Users could come across one of the bait traps and interact with either equipment or trapped burros in the absence of project personnel. Since wild burros are not used to human contact and can be easily startled, the risk of someone being bitten, kicked, or run at by a burro would be likely if they decided to enter the corral while it was occupied by animals and project personnel were not present.

Trapping and darting of burros under the proposed four-year project along with normal trapping activities for nuisance burros may increase the number of interactions with the public over time. Over the very long-term (20 years or longer), if the results of the project are found to be effective in reducing jenny fertility rates (through extrapolation), there could be a reduction to the number of nuisance complaints from the public from burros damaging private property.

Although there is a very high percentage rate (94.6%) of recovery by project personnel for darts administered in the field using opportunistic darting (Kirkpatrick 2008), public could be exposed to unrecovered darts that have been fired and left in the field unintentionally. PZP is a naturally occurring pig protein that can begin to degrade if it is not stored on dry ice or kept in a cool environment. Degradation results in a loss of effectiveness and therefore minimizes danger to public.

Text suggested by EPA to HSUS in a previous document (EPA 2012) states that ZonaStat-H PZP should be used with care and it should:

- Be kept away from children, humans, domestic animals, and pets.
- Not be self-injected.
- Be known that accidental injection could cause infertility in women.
- Be handled wearing protective gloves, long sleeved shirts, long pants, shoes, and socks.
- Not be used with implements for mixing, holding, or transferring food or feed.
- Not be mixed with water or placed in areas where water is present.

Guidance for Human Exposure to ZonaStat-H PZP

If exposed to ZonaStat-H PZP, general instructions include calling a poison control center or doctor for treatment advice. Text also noted that when calling, the user should have the product container available.

Specific instructions included the following:

On-skin, user should take off contaminated clothing and rinse skin with plenty of water for 15 to20 minutes.

If inhaled, the user should be moved to fresh air. If the person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.

If in eyes, the user should hold their eye open and rinse it slowly and gently with water for 15 to 20 minutes. If the user is wearing contact lenses, remove them after the first five minutes of washing, and then continue the rinsing.

The chances of a dart being left unrecovered in the field are expected to be rare (<4.6% based on the results of Kirkpatrick 2008) and of public encountering an unrecovered dart are believed to be even rarer. In addition, the ingredients of ZonaStat-H PZP degrade more with time. Impacts to public from encountering a dart in the field are expected to be minimal.

Cumulative Effects Expected from the No Action Alternative

See Common to All Alternatives (3.4.1)

3.4.6 Native American – Traditional Values and Concerns

Affected Environment

The Black Mountains have a variety of significant cultural resources including sites of traditional religious and cultural significance to local Native American Tribes. The project area includes the ancestral lands of several Indian tribes including the Mohave, Hualapai, and Yavapai. Prehistoric archaeological sites that represent an ancestral occupation of this area are abundant.

Environmental Impacts from the Proposed Action Alternative

Trap sites would be limited to existing disturbed areas or areas that have been surveyed and determined to be void of cultural resources. Collection and disturbance of cultural resources would be prohibited in the Proposed Action. In addition, trapping activities would be temporary, and not create any enduring visual marks on the landscape. There would be no expected impacts to sites of traditional religious and cultural significance.

Environmental Impacts from the No Action Alternative

See Common to All Alternatives (3.4.1)

Cumulative Effects Expected from the Proposed Action Alternative

See Common to All Alternatives (3.4.1)

Cumulative Effects Expected from the No Action Alternative

See Common to All Alternatives (3.4.1)

3.4.7 Recreation Resources

Affected Environment

The project area encompasses two (2) wilderness areas, several miles of Off-Highway Vehicle (OHV) routes, designated motorized and non-motorized trails, a designated scenic Back Country Byway, various points of interest for dispersed recreational opportunities, and a wide variety of scenic values. Several types of seasonally exclusive recreational activities are present within the project area including hunting, OHV use, burro watching, wildlife watching, photography, primitive and unconfined recreational activities, and a wide variety of other dispersed recreational opportunities. These activities predominately occur in the fall, winter, and spring months from September 1 – April 30 annually. This is due to extreme summertime temperatures that are typical within the project area and due to an influx population that "snow birds" bring to the surrounding communities including Bullhead City, Mohave Valley, Golden Valley, Topock, and Golden Shores.

Access for recreational opportunities is gained via existing roads, trails, and navigable washes. Many of these routes are subject to washouts from extreme monsoons and subsequent flash floods that create an ever-changing and challenging environment for recreationists. Although there is a high density of routes within the project area, much travel by recreationists is confined to main north-south and east-west connectors that have been used historically by the local population. Use of these access routes is contingent on both seasons and time of day. These access routes are used most during the fall, winter, and spring months, and typically on weekends with the highest densities occurring in the morning hours between 6 A.M. and 12 P.M. Compared with peak times of use during the aforementioned periods, the use is almost non-existent during the summer months and exclusive to the early morning or late evening hours when the day-time temperatures recede.

Environmental Impacts from the Proposed Action Alternative

Capture, treatment, and monitoring associated with the Proposed Action would increase the presence of management on public lands and could potentially increase the amount of user conflict from a recreationist's point of view. During capture and monitoring, recreationists could be reduced from accessing an area for a short period of time (no more than 8 hours) as a result of personnel conducting the project (capturing or monitoring). However, this disruption is expected to be rare, minor in nature, and is only expected to affect a small portion of all recreationists within the project area. Furthermore, the presence of HSUS personnel could provide an opportunity for public education and outreach in the Wild Horse and Burro Program.

Implementation of the Proposed Action is not expected to have any adverse impacts on the present state of recreational opportunities in the project area.

Environmental Impacts from the No Action Alternative

In addition to what is already stated under this heading for Common to All Alternatives in Section 3.4.1, additional degradation of the landscape in the Black Mountain ecosystem over the long-term could have a negative effect on the perception of recreationists. Responses by recreationists could result in less desire to have experiences on public lands and therefore diminish opportunities available for public to recreate within the project area.

Cumulative Effects Expected from the Proposed Action Alternative

Direct cumulative effects to recreation and access could include increased user-conflict as a result of the Proposed Action and temporary disruptions to typical recreational activities over the course of the project.

Cumulative Effects Expected from the No Action Alternative

As stated above, the increased decline of the Black Mountain ecosystem is expected to have a negative effect on the perceived outcome of recreationists. A subsequent effect could be a socio-economic loss to locales in the project area that are not sought out as often by locals and "snow-birds" during seasonal and annual travels.

3.4.8 Vegetation Resources, Including Special Status and Invasive Plant Species,

Affected Environment

The plant community in the project area is Mojave Desert Scrub. Typical species include creosotebush, white bursage, flat-top buckwheat, Mormon tea, buckhorn cholla, barrel cactus, ocotillo, and Mohave yucca. There is one BLM Sensitive plant species, the Cerbat beard-tongue, which has the potential to occur in the project area. This species has only been documented in the northern portions of the Black Mountains, and not in the project area. There are no threatened or endangered plant species in the project area. There are several invasive non-native species found in the project area with red brome being the most dominant one found in the project area.

Environmental Impacts from the Proposed Action Alternative

The bait trap and bait station areas identified in Table 2 have been previously disturbed or are in open desert wash areas void of vegetation. These areas are expected to be minimally affected as vegetation cover is considered low in these areas. Any new trapping locations that are in previously disturbed areas or open desert washes are only expected to be minimally affected.

If additional bait traps or bait stations, or temporary holding facilities are needed and later identified in undisturbed areas, up to 1,200 square feet of vegetation could be affected at each location as a result of the installation and operation of the bait/traps. The native vegetation is not expected to be consumed as burros and/or cattle would be coming to the area to eat the hay that is being used as bait in the trap. However, crushing and trampling of vegetation in the bait/trap could occur, but is expected to be short-term and intermittent (1 month or less). The likelihood of degradation to the native vegetation would depend on the duration of time the trap is used.

In areas receiving less than one month of use, vegetation is expected to recover in 1-5 years. Over the four year project, some trap sites could be used for longer than 1 month and eventually be denuded of vegetation. Denuding can open desert rangelands to invasion by non-native, invasive species. Red brome, which is naturalized and already present in the Mojave Desert, could dominate these sites. Native vegetation is expected to take longer to recover in highly disturbed areas. Recovery to pre-disturbance levels may take 10 to 30 years (Belnap 2008).

Trap sites, bait stations, and temporary holding facilities would not be located where the Cerbat beard-tongue is physically present. Therefore no impacts are expected to the Cerbat beard-tongue. Mitigation measures include that all new trap sites would be biologically cleared prior to use.

Remote treatment not using bait or trap stations, and monitoring activities, would not affect vegetation as these actions would be conducted from a vehicle parked on a road, trail or wash, or by hiking or riding horseback, and/or stopping to observe burros with binoculars. There is a potential for vehicles traveling through the area to translocate noxious and invasive weed seeds through the area, especially if they pass through or park in areas where the weed species are present. Mitigation measures include that HSUS personnel would be trained to recognize and avoid areas with noxious and invasive weeds during their travels.

Environmental Impacts from the No Action Alternative

No impacts are expected to occur to vegetation or the Cerbat beard-tongue from the No Action Alternative as no bait/trapping stations or temporary holding facilities would be installed. Therefore, no human activities or concentration of ungulates would occur at the proposed locations to cause the crushing or removal of vegetation. The potential for red brome or other invasive species to increase as a result of bait trapping, bait stations, or temporary holding facilities would not occur.

Cumulative Effects from the Proposed Action Alternative

Cumulative impacts to vegetation in undisturbed trap and bait locations could result in vegetation damage or facilitate invasion of invasive species into these areas. Also see Common to All Alternatives (3.4.1)

Reducing grazing pressure by any ungulates could indirectly affect vegetative productivity and cover through increased reproductive success and plant growth. Increased vegetative cover would allow for greater rain infiltration thus helping to shade and "cool" soils, while also providing for potentially higher seed germination and establishment. A plant community in good ecological health is more resilient, better able to withstand non-native plant invasion, and more likely to sustain itself through frequent drought, higher temperatures, and changing rainfall patterns brought about by climate change.

Cumulative Effects from the No Action Alternative

See Common to All Alternatives (3.4.1)

3.4.9 Wild Horses and Burros

Affected Environment

The project area is located in the Black Mountain HMA. The Black Mountain HMA was designated in the early 1980's and is the largest in Arizona. The HMA includes the entire range of the Black Mountains encompassing approximately 925,000 acres of land that includes private, state, tribal, and public acreage.

Burros were introduced to the Black Mountains by miners and prospectors in the early 1860s and with few natural predators they have thrived in this environment, independent of man, since. Wild burros are protected, managed and controlled by the federal government under the authority of the Wild and Free Roaming Horse and Burro Act of 1971, as amended, to ensure healthy herds thrive on healthy range lands. The BLM cares for these living symbols as part of its multiple-use mission under the 1976 Federal Land Policy and Management Act.

Burros are medium sized ungulates that can use a variety of terrain including flat areas as well as

the steep, more rugged terrain usually associated with desert bighorn sheep. Typically, burros are opportunistic grazers that can efficiently use coarse, lower quality forage (BLM 1996).

An initial AML was set in the BMEMP in 1996 at 478 wild burros. An aerial survey in 2014 conducted by the BLM, in cooperation with the Arizona Game and Fish and USGS, indicated a population estimate of 1,517 to 1,827 burros at that time (Griffin 2015). In fiscal year 2015, it cost an estimated $100,000 to gather, remove, and transport 134 nuisance burros that had moved from public lands to private property in the KFO to a holding facility in Axtell, Utah.

BLM has been supporting research on wild horse fertility control since the 1970's. Early BLM-sponsored research included the use of hand-injected and remotely delivered androgens[6] to stallions in the Challis HMA in Idaho, and estrogen and progestin implants in mares at Clan Alpine HMA in Nevada (Plotka et al. 1992; Turner and Kirkpatrick 1982). Although some of these methods were pharmacologically successful (i.e., they curtailed reproduction), steroid contraceptives proved difficult to deliver to wild horses in the field. Additionally, they raised concerns about passage through the food chain, behavioral and health side effects, and horse welfare (Turner and Kirkpatrick 1991).

In 1990, the focus of wild horse contraceptive research shifted to the PZP immunocontraceptive vaccine. This shift was spurred by research at Assateague Island National Seashore, Maryland, which demonstrated that a dart-delivered PZP vaccine prevented pregnancies in wild horses with 90% effectiveness or more (Kirkpatrick et al. 1990). This same formulation was shown to be 100% effective on jennies on the island of St. John while 54% of the untreated control group of jennies became pregnant during the same time period. The drug also proved to be safe, effective and reversible (Turner et al. 1996). That project also illustrated that feral burros could be accessed for remotely delivered PZP (i.e., pneumatic dart projector).

Kirkpatrick (2012) states in his question and answers paper:

> "Because PZP is protein, it is readily destroyed in digestion, reduced to amino acids, and therefore cannot pass through the food chain intact and with biological activity (Oser 1965). A quote from a freshman-level biology text more or less sums this issue up: "Both pH and temperature can bring about a change in protein shape. When a protein loses its normal configuration, it is said to be denatured. Once a protein loses its normal shape, it is no longer able to perform its usual function".

In 2013, the National Academy of Sciences (NAS) reported that PZP was one of the three most promising methods of fertility control for wild horses and burros. Naugle and Grams (2013) noted that with safer and more sophisticated delivery equipment, the remote delivery of immunocontraceptive agents has proven to be effective.

Burro contraceptive research has not been a focus of the BLM in previous years for reasons that include: (1) there are fewer population numbers of burros than horses, (2) burros have a slightly slower reproductive rate than horses, and (3) historically burros had a steady adoption demand. However, recently: (1) burro adoption numbers have decreased since 2002, (2) wild burros are

[6] Androgen: A male sex hormone that promotes the development and maintenance of the male sex characteristics.

over AML in several HMA's in Arizona, and (3) there is an increasing concern for wild burros in the BLM CRD and in the surrounding communities.

In general, the safety of PZP on equids has been well-established. Even with the use of Freund's Complete Adjuvant in priming doses, draining abscesses at the injection-site are extremely rare, especially when the vaccine is hand-injected (Kirkpatrick et al. 1990; Lyda et al.2005; Turner et al. 2001).

The PZP vaccination does not affect ongoing pregnancies, survival or fertility of foals of treated mares (Kirkpatrick et al. 1990; Turner et al. 1996; Kirkpatrick and Turner 2002; Lyda et al. 2005). The relationship between vaccine reversibility and the number of years treated is fairly well described for the simple PZP/adjuvant Assateague vaccine (Kirkpatrick and Turner 2002; Turner et al. 1996). Return to fertility is progressively delayed after three consecutive years of treatment, with delays of four (4) years or more possible after four (4) or more consecutive years of treatment.

Population effects of contraception have been modeled. Garrott developed a stage-structured model using survival and fecundity data from a range of western wild horse populations (Garrott 1991). These models indicated that high proportions (60-80% or more) of females would need to be treated with contraceptives to achieve stability or herd reduction, with smaller proportions still achieving measureable reductions in overall reproductive rates. However, the model also assumed that mares would be treated at intervals equal to the duration of the contraceptive, which produced the counterintuitive result, that short-acting contraceptives would be more effective at controlling populations than long-acting contraceptives. WinEquus (Jenkins 2002) is used by the BLM to forecast wild horse populations in specific HMAs. However, no similar population projection models have been developed for the wild burro populations.

BLM does not have experience in administering ZonaStat-H PZP to burros, but researchers and the BLM have extensive experience with PZP in horses. The immunocontraceptive PZP vaccine meets most of the requirements for an ideal contraceptive agent including criteria for safety and effectiveness, although the one-year duration of most contraceptive effects is a drawback to current formulations of PZP vaccine, including ZonaStat-H. When injected, PZP vaccine acts as an antigen and causes a mare's immune system to produce antibodies. These antibodies then bind to eggs in the mare's ovaries and effectively block sperm binding and fertilization (Zoo Montana, 2000). The vaccine is relatively inexpensive and can be remotely administered in the field. Research has demonstrated that contraceptive effectiveness is 90% for mares treated twice in the first year and boostered annually (Turner and Kirkpatrick, 2002). Contracepted mares typically show improvements in body condition and may actually live longer (Turner and Kirkpatrick, 2002).

PZP contraception appears to be temporary (Kirkpatrick and Turner, 2002), does not appear to cause out-of-season births (Kirkpatrick and Turner, 2003), and has no ill effects on ovarian function if contraception is not repeated for more than five consecutive years on a given mare. If mares are already pregnant, the PZP vaccine has not shown to affect normal development of the fetus or hormone health of the mare. Permanent sterility for mares treated consecutively 5-7 years was additionally verified (Nunez et al. 2010). However, Knight and Rubenstein (2014) speculated that three consecutive years may trigger infertility in some mares.

Ransom et al. (2010) found no differences in how PZP-treated and control mares allocated their time between feeding, resting, travel, maintenance, and social behaviors in three (3) populations of wild horses, which is consistent with Powell's (1999) findings in another population of horses. Likewise, body condition of PZP-treated and control mares did not differ between treatment groups in Ransom et al.'s (2010) study. Turner and Kirkpatrick (2002) found that PZP-treated mares had higher body condition than control mares in another population, presumably because energy expenditure was reduced by the absence of pregnancy and lactation. Nunez et al. (2010) found that mares coming off treatments showed no change in behavior or timing of foaling.

In two studies involving a total of four wild horse populations, both Nunez et al. (2009) and Ransom et al. (2010) found that PZP-treated mares were involved in reproductive interactions with stallions more often than control mares, which is not surprising given the evidence that PZP-treated females of other mammal species can regularly demonstrate estrus behavior while contracepted (Shumake and Wilhelm 1995, Heilmann et al. 1998, Curtis et al. 2002).Ransom et al. (2010) found that control mares were herded by stallions more frequently than PZP-treated mares, and Nunez et al. (2009). Similar results could be expected in burros. Burros do not exhibit a harem-type social structure, but it is plausible that PZP-treated jennies may be subject to more reproductive attention from jacks (male burros) than control jennies.

Nunez (2010) found that PZP treatments can broaden the breeding and foaling season in horses. In a study by Knight and Rubenstein (2014) it was found that mares that were treated had better body condition, lived longer, and switched harems more frequently, while mares that foaled spent more time concentrating on grazing and lactation and had lower overall body condition. It would be expected that PZP-treated burros may attain better body condition than control animals with foals, but the lack of a harem-based social structure in burros means that the social results observed in horses would probably not be applicable in burros; however, this project is not designed to test burro social associations per se'.

Aggression between stallions and mares has also been studied in three wild horse populations and no difference was found between the treatment groups (Ransom et al. 2010). Data regarding level of competition and aggression between band stallions in relation to the presence and number of treated mares were also collected during this study, but analyses have not been published. Harem-tending by stallions, such as urine and fecal covering of mare excretion and active defense of mares against other stallions, was best explained by a model of mare body condition in the Ransom et al (2010) study. Stallions in that study tended higher condition mares more frequently than lower condition mares. Comparable results would not be expected in burros, because jacks do not typically tend harems.

Environmental Impacts from the Proposed Action Alternative

Direct individual impacts are those impacts that are immediately associated with implementation of the proposed action. Impacts associated with the following activities, that are part of the proposed action, could lead to stress (defined here as emotional anxiety or physical discomfort) for individual jennies':

- Capture and/or re-capture.
- Separation between males and females and transportation to temporary holding facilities.
- Identification process, to include freeze marking.
- Administering of ZonaStat-H PZP and/or the booster vaccine.

Typically burros that are caught in bait traps calm down quickly (within a few minutes of the capture crews arrival) (Oyler, personal communication 2016). Males would be separated from the females and released back out on the HMA as soon as capture crews arrive at the trap sites. It is likely that some of the male burros will return again to the trap sites for the alfalfa hay and/or other forms of bait and may therefore be captured multiple times. Stress on these animals is expected to be minimal.

Burro social groups may be split when unhabituated female burros and their foals are separated from males with whom they were temporarily associating, loaded onto a horse trailer, and transported to a nearby holding facility. With regard to separating burros from temporary social groups, Boyd et al. (2016) wrote that there are "…no permanent or long-lasting bonds between any two individuals other than between an adult female and her current foal." Mothers will not be separated from their attendant foal. Stress on the males and/or the mother/foal pairs is expected to be minimal.

Stress to the burro could occur during the identification and freeze marking. Burros would need to be restrained in a chute to allow personnel to identify, age, and freeze mark the jennies. Freeze marking is a technique that is commonly used by the BLM and that is considered a standard practice when needing to physically identify large animals (AZ Dept. of Ag. 2013). The area to be marked is shaved and washed with alcohol, and the mark is applied with an iron that is first chilled in liquid nitrogen. The hair at the site of the mark grows back white and shows the identification number. Every effort is made to apply freeze marks that are legible; however, occasionally freeze marks get blurred, i.e., the animal moves when the iron is applied and all or some of the identification number cannot be read. It can also be difficult to read some freeze marks because of the surrounding hair color and/or other markings of the animal. The identification and freeze marking process will be completed as quickly as possible, and stress on these animals is expected to last less than a few hours after processing is completed.

Jennies may also experience stress and other potential direct and indirect impacts during or as a result of administration of the ZonaStat-H PZP (the initial dose or the booster). Direct individual impacts could be associated with the remote-darting activity for delivery of the vaccine. In wild horses, the intensity of these impacts varies by individual and is indicated by behaviors ranging from nervous agitation to physical distress; direct physical impacts in burros may be expected to be generally within the range of that observed in wild horses. "Mortality and/or permanent injury of individuals from direct impacts due to darting is unlikely" according to Coates-Markle (BLM 2006). According to the USGS 2009 "Our results for frequency of occurrences of abscesses in mares darted at Pryor (0.8%) were very similar to those reported...but somewhat higher (5.5%) at Little Book Cliffs." Abscesses would be expected to develop in 0.8 to 5.5% of all mares treated, and the rate is likely to be comparable for treated burros. This rate should be minimized by following the established SOPs. In order to mitigate the direct impacts of fertility control, all vaccine would be controlled, handled and administered by trained, certified and experienced darters. These personnel would be on-site during all phases of the operation and would be responsible for the accurate identification of individual age-specific burros.

Stress, as an immediate result of darting with ZonaStat-H PZP, is possible if the vaccination results in an infection or if an abscess occurs at the injection site. Minimal impacts are expected to occur from remote delivery of the vaccine in the field. It is expected that some soreness may occur at the injection site which could last for up to 1-2 days. Darting in the hip (a large muscle) reduces the amount of time that the injection site may be prone to soreness. An individual

jennies' previous records would be reviewed prior to any darting activity. The presence of abscesses should be minimized when utilizing the SOPs (Appendix E) and Mixing Protocol (Appendix F).

Stress may be indicated by behaviors such as the burros' election to temporarily refrain from eating and/or drinking, nervous agitation, and kicking. Long-term consequences of impacts are difficult to assess and impacts are reported to be rare (Oyler, personal communication 2016).

Treated jennies would be monitored on a regular basis in keeping with the HSUS research proposal for any potential swelling, stiffness, muscle tremors, nodules, granulomas, abscesses, and/or behavioral depression which might develop subsequent to ZonaStat-H PZP darting. A lump that appears or persists longer than two weeks after an injection is defined as a persistent nodule. In order for the swelling to be classified as an abscess, it would require the nodule to eventually open at the surface allowing for the drainage of pus, as a sign of infection at the site. In order to mitigate the impacts of fertility control, all vaccines would be controlled, handled, and administered by trained, certified and experienced darters. The darters would be responsible for the accurate identification of individual jennies'.

In the rare instance a burro needs to be re-captured to treat an abscess or re-apply a freeze mark, the burro may endure the same stress impacts as previously described. This is expected to be very minimal and short in duration.

Indirect individual impacts are those impacts that occur after the initial stress event and may develop as a result of the application of fertility control vaccine. Impacts that could occur in wild horses include increased social disorder and/or a prolonged foaling season. It is not expected, though, that social disorder would result in wild burros, because the fundamental unit of social interactions is a single jenny and her attendant foal. In wild horses, impacts could also result in an opportunity for increased fitness and body condition in treated mares. Extended length between generations provides for lengthening generation time and slows the rate of genetic loss (Cothran, personal communication 2010). All treated burros would be monitored for body condition and foaling under the proposed project.

Population-wide direct impacts are immediate effects which would occur during or immediately following implementation of the Proposed Action. The Proposed Action could contribute to the reduced conception rate for a subset of the population of burros in the Black Mountain HMA. If ZonaStat-H PZP reduces the conception rate it could slow recruitment of the subset of animals over the course of this project. Therefore, competition for forage and water between burros, livestock, and wildlife is expected to be locally reduced because this subset of jennies would not be contributing to the population growth over the course of the project.

Contracting to gather and trap burros is not a cost effective method for the BLM to pursue on an annual basis. Additionally, the capture and release method of burros could result in capture-avoidance behaviors from the animals. Remote-delivery of the fertility control vaccine would result in fewer disturbances to the herd as a whole, compared to widespread trapping for booster delivery, or extensive use of gathers to reduce population size. However, remote-delivery could also result in remote-delivery-avoidance behaviors from the animals. Dart-based delivery is expected to support a minimum feasible level of management.

Direct population-wide impacts might consist of a heightened awareness of human presence following the darting activity. This is likely to be temporary in nature but may persist for some time in some burros. Repeated (annual) remote-darting of older mares did not appear to cause cumulative horse/harem sensitivity or stress within the Pryor Mountains herd (Coates-Markle 2006).

Population-wide indirect impacts would not appear immediately as a tangible effect and may be difficult to quantify. These are primarily associated with the use of fertility control and reductions in fecundity in treated wild jennies. If PZP application is widespread in a population, it has the potential to change the age structure of the population. Reduced herd growth can allow for longer periods of time between gathers, reduce the size and impact of gathers, and limit the loss of genetic diversity through removals. The population size in the Black Mountain HMA is large, though, so loss of genetic diversity is not expected to be a concern as a result of the proposed action.

Capture operations would be in accordance with WO Instruction Memorandum 2015-151, Comprehensive Animal Welfare Program for Wild Horse and Burro Gathers to minimize stress and injury impacts to animals during capture and transportation. Water would be provided at all bait traps. Handling of the wild burros, i.e., sorting and unique freeze marking could result in injury to the animal(s). Mitigation for this is handled through the comprehensive animal welfare program, for gathers. Any burro injured during capture or treatment would be addressed in accordance with WO IM 2015-070. Trap sites and temporary holding sites would be located to reduce the likelihood of injury and stress impacts to the animals, and to minimize potential damage to the natural resources of the area. These sites would be located on or near existing roads whenever possible. All trap sites located on private land would have written permission prior to any operations.

The BLM does not intend to restrict or close the affected public lands during the trapping portions of the project. However, for the safety of the animals only authorized personnel and/or the BLM employees would be allowed at the trap sites during processing operations. The local Wild Horse and Burro Specialist shall identify the operational area necessary for safe execution of the gather operations including animal welfare and transportation. This information would be provided to all gather personnel so that accurate information can be relayed to the public/media. The local Wild Horse and Burro Specialist would work with the gather crew to discuss arrangements with the private landowner if the temporary holding facility is located on private land and would address concerns of public access limits and allowances on private land.

Environmental Impacts from the No Action Alternative

See Common to All Alternatives (3.4.1)

Cumulative Effects from the Proposed Action Alternative

If a darting-based approach to ZonaStat-H PZP booster delivery is effective in this project and is used in future applications across BLM HMA's as a population growth suppressant, then some cumulative effects can be expected.

Due to the reproductive lifespan of individual burros and the large current population of burros in the Black Mountain HMA, any loss of genetic material from the herd would be relatively slow and could be monitored and mitigated by management. Bureau policy is to regularly collect

samples for genetic testing. This data, in conjunction with any previously collected data would be used as baseline information on genetic diversity in the Black Mountain HMA.

Handling and marking burros for identification purposes for future implementation may cause some additional stress impacts on the burros.

In the future, the KFO may propose to do removals. If removals occur, animals from this project may be gathered. KFO staff would be on site and determine at the time of capture if those animals are candidates for removal. If jennies captured during a removal are part of the project, they would receive the booster if needed at the trap site and be released back onto the HMA.

The existing/current uses of the public land would continue within the HMA. Recreation levels could increase along with the Mohave County population trends. More people would be viewing herd activities. Public outreach would continue. Visitors could see darting activity and could ask questions of Project personnel.

ZonaStat-H PZP could be dropped from BLM use if another treatment or immunization efforts are brought forward by the veterinary or scientific community that are shown to control equine populations more effectively or efficiently. New proposals brought to the BLM for consideration would be channeled through the National Research Committee and would be analyzed through NEPA. Any impacts to wild burros would be identified and protective measures would be applied as appropriate.

Also see Common to All Alternatives (3.4.1)

Cumulative Effects from the No Action Alternative

Effects are similar to those addressed above and in Section 3.4.1. Common to All Alternatives. BLM would continue to identify impacts as they occur and mitigate them as needed on a project specific basis.

3.4.10 Wilderness Resources

Affected Environment

The project area encompasses two (2) wilderness areas, including Warm Springs and Mount Nutt designated Wildernesses. The Black Mountain Ecosystem Management Plan (BLM, 1996) identifies objectives for management of these wilderness areas. The primary management objective for these areas is to maintain or enhance the natural untrammeled appearance of landscapes. Several types of seasonally exclusive uses occur within the wilderness areas including hunting, wildlife watching, photography, short-term camping, and primitive and unconfined recreational activities. These activities predominately occur in the fall, winter, and spring months from September 1 – April 30 annually. This is due to extreme summertime temperatures that are typical within the wilderness areas and due to the influx population that "snow birds" bring to the surrounding communities including Bullhead City, Mohave Valley, Golden Valley, Topock, and Golden Shores.

Access to the Warm Springs and Mount Nutt wilderness areas recreational opportunities is gained via existing boundary roads, trails, and navigable washes at concentrated access areas. Access within the wilderness areas is gained by non-motorized and non-mechanized means

either by hiking or on horseback. Use typically occurs as a result of repeat visitation and in groups of 1-3 with rare occurrences of larger groups. These user groups are typically familiar with wilderness areas and use these areas consistent with wilderness designation (they are typically supporters of wilderness designation). Due to management activities occurring in the past (management presence at boundaries, overflights conducting wildlife census surveys, captures and release of desert bighorn sheep, etc.), these users are acclimated to disruptions.

Environmental Impacts from the Proposed Action Alternative

Monitoring is the only action that would be occurring within the wilderness areas associated with the Proposed Action. Monitoring within the wilderness areas would be accomplished by non-motorized and non-mechanized means and be either on-foot or by horseback and occur continually throughout the duration of the project (4 years) usually consisting of 1-2 individuals. Contact of wilderness users with project personnel could occur throughout the duration of the project on a sporadic basis depending on where project personnel are located within the project area. This influx of human contact could diminish a wilderness user's experience depending upon their pursued activity and their perspective for interaction with project personnel. However, as mentioned above, most wilderness users have been habituated to management activities occurring in wilderness and they do not typically allow such interactions to lessen their wilderness experience. Also see Section 3.4.1 Common to All Alternatives, and 3.4.7 Recreation.

Implementation of the Proposed Action is not expected to have adverse effects on the present state of wilderness opportunities in the project area.

Environmental Impacts from the No Action Alternative

As stated under Section 3.4.1 Common to All Alternatives for this heading, if (1) the Proposed Action does not occur, (2) adoptions remain on the decline, and (3) BLM is not able to gather burros to remove them and decrease the AML, it is likely that the burros on the Black Mountain HMA would increase. Under this scenario, additional degradation in the Warm Springs and Mount Nutt wilderness areas over the long-term could have a negative effect on the perception of the wilderness users. Responses by wilderness users could result in less desire to frequent their public lands.

Cumulative Effects from the Proposed Action Alternative

Direct cumulative impacts to wilderness would include increased user-conflict as a result of the Proposed Action and temporary disruptions to typical wilderness experiences over the course of the project.

Also see Section 3.4.1 Common to All Alternatives, and 3.4.7 Recreation.

Cumulative Effects from the No Action Alternative

As stated above, the increased decline of the Warm Springs and Mount Nutt wilderness areas ecosystem is expected to have a negative effect on the perceived outcome of wilderness users. A subsequent effect could be a socio-economic loss to locales in the project area that are not sought out as often by locals and "snow-birds" to fewer seasonal and annual travelers desiring to visit the Warm Springs and Mount Nutt wilderness areas.

3.4.11 Wildlife Resources: Including Migratory Birds and Special Status Species

Wildlife

Affected Environment

Typical wildlife found in the project area are coyote, Merriam's kangaroo rat, white-throated woodrat, black-tailed jackrabbit, desert cottontail, mule deer, western diamondback rattlesnake, Sonora whipsnake, desert night lizard, side-blotch lizard, Gambel's quail, mourning dove, great-horned owl, big horn sheep, mule deer, and mountain lion.

Environmental Impacts from the Proposed Action Alternative

Minor impacts to wildlife could be expected at trap and bait sites. Human activities over several days and concentrated ungulate activity could cause wildlife to temporarily move away from the bait/trapping stations. Wildlife could be displaced for 15 minutes to 12 hours at any location during the checking of traps and/or while trapped animals are treated or removed. If traps are set close to water, wildlife may not come in and drink due to the trapping activities. Once these activities cease, wildlife is expected to move back into these areas.

The effects to habitat from the Proposed Action include trampling or denuding of habitat at the bait/trapping station, and temporary holding facilities as described in the Vegetation Section. These impacts would be small (1,200 square feet per location) in extent. Habitat recovery would be as described in the Vegetation Section.

Monitoring activities are not expected to affect wildlife as habitat would not be disturbed and monitoring is not expected to last more than 1 day at any location. Wildlife may encounter darters or observers which could cause wildlife to leave the immediate area.

There is the potential for a dart to be left unrecovered in the field during treatment activities. Wildlife (mostly small mammals that gather seeds or other objects from the desert) could encounter the darts. Woodrats could pick up the darts and carry them to their middens, possibly chewing on the darts and ingesting the contents. The impact of this to wildlife as a whole is expected to be so small as to be unmeasurable.

Environmental Impacts from the No Action Alternative

No direct impacts are expected to occur to wildlife or habitat from the No Action Alternative as there would be no bait/trapping stations or temporary holding facilities installed. Therefore, no human activities or concentration of ungulates would occur as a result of this project at these locations.

Cumulative Effects from the Proposed Action Alternative

Direct cumulative impacts of the Proposed Action to wildlife, when considered with other past, present, and reasonably foreseeable activities in the project area could impact wildlife by causing habitat disturbance and displacement of small animals (mice, rabbits, lizards etc.) at the approximately 1,200 square feet of trapping, bait, and temporary holding locations.

Also see Section 3.4.1 Common to All Alternatives

Cumulative Effects from the No Action Alternative

No direct effects are expected under the No Action Alternative to wildlife or wildlife habitat as no ground disturbing activities would be conducted. However, with consideration of analysis covered in Section 3.4.1 Common to All Alternatives, indirect effects to wildlife could occur as BLM would be limited only to the current wild burro population control methods, which are removals. Due to the cost of removals and a recent decline in adoption rates, wild burros would likely increase in numbers. Over the long-term, grazing pressure from wild burros would not be reduced, which could potentially contribute to increased habitat degradation and subsequent effects to ecological health. Over the long-term when ecological health is lowered, wildlife habitats could become less resilient to drought, higher temperatures, and changing rainfall patterns brought on by climate change.

Migratory Birds

Affected Environment

Migratory birds found in the project area are typical of bird species that occupy the Mojave Desert Scrub plant community. These species include the cactus wren, curved billed thrasher, black throated sparrow, loggerhead shrike, common raven, red-tail hawk, great-horned owl, lesser nighthawk, and black-tailed gnatcatcher. Nesting of these species mostly occurs in vegetation with the exception of the nighthawk, who does not build a nest but lays its eggs on the ground. Nests can also be found on rock cliffs, or on steep desert wash faces.

Environmental Impacts from the Proposed Action Alternative

Approximately 0.4 acres of migratory bird habitat may be disturbed as a result of the installation and operation of the bait/trap stations and temporary holding facilities. The installation of temporary corrals and the concentration of ungulates (burros and possibly cattle) in previously undisturbed areas could crush and potentially denude vegetation at these locations (see *Vegetation* Section). The bait/trap stations and temporary holding facilities located at previously disturbed sites or in desert wash areas that have no vegetation are not expected to affect migratory bird habitat.

During nesting season (February 1 through August 31), there is the potential for bird nests to be disturbed during the bait trap/station, temporary holding facility installations and operations. This could result in the unintentional take of migratory birds (eggs or nestlings).

Monitoring of jennies is not expected to affect migratory birds. These actions would be conducted by one or two individuals working from a vehicle parked on a road, trail, or wash, or when hiking, riding on horseback, and/or when stopping to observe burros with binoculars. These activities are not expected to result in the unintentional take of migratory birds because they are temporary in nature (less than 1 day at any one location).
There is a potential for darts to be left unrecovered in the field when remotely treating burros. Birds could find these darts. It is unlikely that birds, except for possibly ravens, would pick up or inspect the darts. There is also the potential for birds to ingest the contents of the dart(s). The potential for ingestion is so small that it is an unmeasurable impact.

Environmental Impacts from the Proposed Action Alternative

No potential for take of migratory birds is expected under the No Action Alternative as there would be no bait/trapping stations or temporary holding facilities installed. No human activities

or concentration of ungulates would occur at these locations. Migratory bird habitat or birds would not be disturbed from trapping and holding activities.

Cumulative Effects from the Proposed Action Alternative

Cumulative effects are the same as describe in section *3.4.11 Wildlife (pages 37 and 38).*

Cumulative Effects from the No Action Alternative

Cumulative effects are the same as describe in section *3.4.11 Wildlife (pages 37 and 38).*

Birds of Conservation Concern and BLM Sensitive Species

Affected Environment

Birds of Conservation Concern (BCC) are all migratory non-game birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act (ESA) of 1973 (FWS 2008). BCC that have the potential to be found in the project area are the western burrowing owl, Costa's hummingbird, Bell's vireo, Bendire's thrasher, Le Conte's thrasher, Lucy's warbler, peregrine falcon, and the prairie falcon.

BLM Sensitive Species that may be found in the project area are the golden eagle, peregrine falcon (also a BCC), Le Conte's thrasher (also a BCC), western burrowing owl (also a BCC), Kingman springsnail (*Pygulopsis conica*), Allen's big-eared bat, California leaf-nosed bat, greater western mastiff bat, Townsend's big-eared bat, Arizona myotis (bat), cave myotis (bat), Sonoran desert tortoise and the Cerbat beard-tongue (*Penstemon bicolor roseus*) (a plant). It is unlikely that the Cerbat beard-tongue would be found in the project area, as it has not been found in this area to-date. It is found much further north in the Black Mountains.

Environmental Impacts from the Proposed Action Alternative

Impacts to bird species listed under the *Affected Environment*, BCC and birds that are listed as BLM Sensitive Species are discussed in *3.4.11 Wildlife*, *Migratory Bird* section.

The Kingman Springsnail would not be affected as none of the bait/trapping stations, temporary holding facilities, treatment, or monitoring would be located in the wet habitat area of springs. This species is found only in association with springs.

Four tenths of an acre (0.4 acre) of bat foraging habitat for the Allen's big-eared bat, California leaf-nosed bat, greater western mastiff bat, Townsend's big-eared bat, Arizona myotis, and cave myotis could be disturbed by the activities associated with the bait/trapping stations and holding facilities. No effects are expected to bat roosting habitat as facilities would not be located in these areas. Treatment and monitoring activities would have no effect on bats as no habitat or bats would be disturbed during these activities. Bats are unlikely to encounter and inspect unrecovered darts.

Approximately 0.41 acres of Sonoran desert tortoise habitat could be disturbed as a result of the installation and operation of the bait/trap stations and temporary holding facilities. The installation of temporary corrals and the concentration of ungulates (burros and possibly cattle) in previously undisturbed areas could crush and potentially denude vegetation for tortoise habitat at these locations. The stations that are located at previously disturbed sites or in desert wash areas that have no vegetation would not affect tortoise habitat.

During bait trapping, treatment, and monitoring, the Sonoran desert tortoise may be run over by vehicles or be unintentionally harassed by workers conducting the project. There is potential for a dart to be unrecovered in the field during treatment activities. Tortoise could encounter the dart, inspect it as potential food, and they could try to bite the dart. The likelihood of the tortoise encountering a dart is so small that it would be unmeasurable and/or would be speculative at best to attempt to measure. The impact of an unrecovered dart in the field as it relates to the Sonoran Desert tortoise is considered negligible.

There is the potential for the Cerbat beard-tongue to be crushed or removed by the activities associated with the installation and operation of the bait/trap stations. Treatment and monitoring activities are not expected to have any effect on the Cerbat beard-tongue, as no habitat would be disturbed during these activities.

Environmental Impacts from the Proposed Action Alternative

No affects are expected to occur to BCC or for BLM Sensitive Species under the No Action Alternative as there would be no bait/trapping stations or temporary holding facilities installed.

Cumulative Effects Expected from the Proposed Action Alternative

Cumulative effects are the same as describe in section *3.4.11Wildlife (pages 37 and 38).*

Cumulative Effects Expected from the No Action Alternative

Cumulative effects are the same as describe in section *3.4.11 Wildlife (pages 37 and 38).*

3.5 Monitoring and Mitigation

> Council on Environmental Quality states in their Jan. 14, 2011 guidance that: "Mitigation measures included in the project design are integral components of the proposed action, are implemented with the proposed action, and therefore should be clearly described as part of the proposed action that the agency will perform or require to be performed. Consequently, the agency can address mitigation early in the decision-making process and potentially conduct a less extensive level of NEPA review."
>
> "Consequently, when such mitigation measures are available and an agency commits to perform or ensure the performance of them, then these mitigation commitments can be used to support a FONSI, allowing the agency to conclude the NEPA process and proceed with its action without preparing an EIS."

Mitigations that are recommended in conjunction with the Proposed Action:

1. The entire area of disturbance caused by the bait/trapping station, and temporary holding facility activities would be reclaimed through hand raking of the entire area(s), placement of rocks into the disturbed area(s), in addition to vertical mulching where needed.
2. All workers would receive education on encountering the Sonoran desert tortoise and handling procedures prior to any field work being conducted. Tortoise handling guidelines would be given to all workers.

3. If trap sites or bait stations are needed outside of those selected in Table 2 of this EA, those selected as potential trap sites, bait stations, and/or temporary holding facilities would be biologically (i.e., for Cerbat beard-tongue) and culturally cleared prior to use.
4. Trap sites needed outside of those selected in Table 2 of this EA would be located on or near existing roads whenever possible. All trap sites located on private land would have written permission prior to any operations.
5. During the bird nesting season (February 1 through August 31), a nest survey would be conducted in a 150 foot radius around each proposed bait/trap station or temporary holding facility. If an active nest is found the station or facility would be moved or the following buffers applied: Buffers would be placed around active nests to avoid disturbance and would include the following per-bird group type: 100-foot buffer for ground/burrow nesters; 1,200 foot buffer for raptors; and 50 foot buffer for all others species.
6. The BLM does not intend to restrict or close the affected public lands during the trapping portions of the project. However, for personnel, members of the public and animal safety, only authorized personnel and/or the BLM employees would be allowed at the trap sites. The local Wild Horse and Burro Specialist shall identify the operational area necessary for safe execution of the gather operations including animal welfare and transportation. This information would be provided to all gather personnel so that accurate information can be relayed to the public/media.
7. The local Wild Horse and Burro Specialist will work with the gather crew to discuss arrangements with the private landowner if the temporary holding facility is located on private land and will address concerns of public access limits and allowances on private land.
8. All vaccines would be controlled, handled, and administered by trained, certified and experienced darters. These personnel would be on-site during all phases of the operation, and would be responsible for the accurate identification of individual jennies'.
9. Bait traps will be visited by Operation personnel twice daily. Communication and locations would be coordinated between BLM and the permittee to determine the process(es) for releasing cattle from traps.
10. Operation personnel would be trained to recognize noxious and invasive species in the Black Mountain HMA such that they would avoid driving through areas having the potential for weed seeds to be transported throughout the Black Mountain HMA.

CHAPTER 4 – CONSULTATION AND COORDINATION

4.1 Public Comments and Privacy Rights

The BLM is committed to making the best informed decision possible so your comments are welcome. In the event that you want to provide comments on this document, please note the following regarding your privacy rights:

> "Before including your address, phone number, e-mail address, or other personal identifying information in your comment, be advised that your entire comment – including your personal identifying information – may be made publicly available at any time. While you can ask us in your comment to withhold from public review your personal identifying information, we cannot guarantee that we will be able to do so."

Contact: Chad Benson
Wild Horse and Burro Specialist
Bureau of Land Management
Colorado River District

Kingman Field Office
2755 Mission Boulevard
Kingman, AZ 86401
(928) 718-3700

4.2 Public Involvement

The National Wild Horse and Burro Research Committee reviewed this proposal and approved it as contained in the attached research proposal in Appendix A. The BLM KFO did not hold any public scoping meetings after the Proposed Action was received from the HSUS.

The BLM KFO is soliciting comments by asking the public to review and provide substantive and respectful input on the EA that analyzes the HSUS proposal to conduct a pilot fertility project in the Black Mountain HMA.

Substantive input has been defined as doing one or more of the following to:

- question, with reasonable basis, the accuracy of information in the EA.
- question, with reasonable basis, the adequacy of, or methodology for, and/or assumptions used in the environmental analysis.
- present new information relevant to the analysis.
- cause changes or revisions in one or more of the alternatives.

Comments that are not considered substantive include the following:

- comments in favor of, or against, the Proposed Action or the No Action Alternative (without reasoning) that meet the criteria listed above (such as "we disagree with The Proposed Action Alternative and believe the BLM should select the No Action Alternative").

- comments that only agree or disagree with BLM policy or resource decisions without justification or supporting data that meet the criteria listed above (such as "leave burros alone").
- comments that do not pertain to the project area or the project (such as "the government should remove livestock from the HMA.").
- comments that take the form of vague, open-ended questions.

4.3 Tribal, Individual, Organizations, or Agencies, Consulted

Under the design criteria of the Proposed Action, no impacts are expected to occur to historic properties, cultural resources, or sites of traditional religious and cultural; therefore, Native American Tribes were not consulted.

4.4 List of Preparers

BLM

Chad Benson	Project Lead and Wild Horse and Burro Specialist
Joelle Acton	Rangeland Management Specialist
Matt Driscoll	Outdoor Recreation Planner
Michael Blanton	Rangeland Management Specialist
Rebecca Peck	Wildlife Biologist
William Boyett	Fuels Wildlife Biologist
Victoria Anne	NEPA and Planning/Environmental Specialist
Shane Rumsey	Archaeologist
Roger Oyler	AZ State Lead Wild Horse and Burro

Humane Society of U. S.

Stephanie L. Boyles Griffin, Senior Director, Innovative Wildlife Management & Services
Gillian Lyons, Wild Horse and Burro Program manager/ Wildlife Protection Department
David Pauli, Senior Advisor, Wildlife Response/Wildlife Protection Department
Dr. Henry Jann, DVM, Co-Investigator

Reviewers

Jared Bybee	W. O. Senior Wild Horse and Burro Representative
Paul Griffin	W. O. Research Coordinator Wild Horse and Burro Program

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6.0 Appendices

Appendix A – HSUS Proposal

Appendix B – WO Instruction Memorandum 2015-151, Comprehensive Animal Welfare Program for Wild Horse and Burro Gathers

Appendix C – Henneke Body Score Worksheet

Appendix D – Data sheet

Appendix E – Standard Operating Procedures for Fertility Control Treatments with Zona Stat-H PZP One-Year Liquid Vaccine

Appendix F – ZonaStat-H PZP Mixing Procedures

Appendix G – Tortoise Handling Guidelines

Appendix A: The HSUS PROPOSAL

See Attached HSUS Proposal Document (PDF)

BLM Research Proposal Format

A. COVER PAGE

US Department of Interior
Bureau of Land Management
Wild Horse and Burro Program

Proposal for Research Effort
(PRIVILEGED COMMUNICATION)

1a. Applicability and efficacy of ZonaStat-H on wild burros in northwestern Arizona.
TITLE OF PROPOSAL (90 Character Maximum)

1b. PI: Boyles Griffin, Stephanie L.; C-I: Henry Jann DVM
INVESTIGATORS (Principal-Investigator LAST NAME, FIRST NAME; Co-Investigators LAST NAME, FIRST NAME)

2a. Stephanie L. Boyles Griffin
NAME OF PRINCIPAL INVESTIGATOR (PI)

2b. (blank)

2c. Senior Director
POSITION TITLE

2d. sboyles@humanesociety.org
EMAIL

2e. The Humane Society of the United States
INSTITUTION AND DEPARTMENT

2f,g. (301) 258-3147 (301) 258-3080
PHONE FAX

2h. ADDRESS: 700 Professional Drive
Gaithersburg MD 20879

3a. THIS PROPOSAL IS A: (Mark one only) X__ NEW APPLICATION ___ CONTINUATION ___ UNPLANNED EXTENSION

3b. FOR COMPLETION, A FUNDING REQUEST IS:

	X	
INCLUDED and REQUIRED	INCLUDED but NOT REQUIRED	NOT INCLUDED

3c. AMOUNT OF FUNDING REQUESTED:

$ 0	$ 18,055	$ 15,640
FIRST YEAR	SECOND YEAR	THIRD YEAR

3d,e. DATES OF PROPOSED STUDY:

10/1/15	12/31/2019
START	END

AGREEMENT: It is understood and agreed by the undersigned if this proposal / application is approved, whether or not a grant is made, it will be according to the terms of the proposal and the stipulations set forth in the accompanying instructions. In addition, a written agreement appropriate for the nature of the proposed work (e.g., Memorandum of Understanding, Assistance Agreement, Task Order, letter of agreement) will be required to outline the obligations of the researchers and the BLM in the conduct of the study.

PRINCIPAL INVESTIGATOR ASSURANCE: I agree to accept responsibility for the conduct, completion and reporting of the study proposed here and to provide the agreed upon progress and final reports.

4a. SIGNATURE OF PRINCIPAL INVESTIGATOR: _____ DATE: _____

CERTIFICATION AND ACCEPTANCE: I certify that the statements made in this application are true and complete to the best of our knowledge, and I accept the obligation to comply with the above agreement. I understand that the Principal Investigator and his/her department will be responsible for any expenses incurred by this project which exceed the approved funding amount.

4b. OFFICIAL SIGNING FOR ORGANIZATION: _____ DATE: _____

4c. ADDRESS:

4d. _____
EMAIL

4e,f. _____
PHONE FAX

1

Appendix B: WO Instruction Memorandum 2015-151, Comprehensive Animal Welfare Program for Wild Horse and Burro Gathers

See Attachment

ATTACHMENT 1: COMPREHENSIVE ANIMAL WELFARE PROGRAM FOR WILD HORSE AND BURRO GATHERS

STANDARDS

Developed by

The Bureau of Land Management
Wild Horse and Burro Program

in collaboration with

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Kathryn E. Holcomb, PhD
University of California, Davis
School of Veterinary Medicine

June 30, 2015

Appendix C: Henneke Body Score

The Henneke System *

Getting an Accurate Body Score

Condition	Neck	Withers	Shoulder	Ribs	Loin	Tailhead
1 Poor	Bone structure easily noticeable	Bone structure easily noticeable	Bone structure easily noticeable	Ribs protruding prominently	Spinous processes projecting prominently	Tailhead, pinbones, and hook bones projecting prominently
2 Very Thin	Bone structure faintly discernible	Bone structure faintly discernible	Bone structure faintly discernible	Ribs prominent	Slight fat covering over base of spinous processes. Transverse processes of lumbar vertebrae feel rounded. Spinous processes are prominent	Tailhead prominent
3 Thin	Neck accentuated	Withers accentuated	Shoulder accentuated	Slight fat over ribs. Ribs easily discernible	Fat buildup halfway on spinous processes, but easily discernible. Traverse processes cannot be felt	Tailhead prominent but individual vertebrae cannot be visually identified. Hook bones appear rounded, but are still easily discernible. Pin bones not distinguishable
4 Moderately Thin	Neck not obviously thin	Withers not obviously thin	Shoulder not obviously thin	Faint outline of ribs discernible	Negative crease (peaked appearance) along back	Prominence depends on conformation. Fat can be felt. Hook bones not discernible
5 Moderate (Ideal Weight)	Neck blends smoothly into body	Withers rounded over spinous processes	Shoulder blends smoothly into body	Ribs cannot be visually distinguished, but can be easily felt	Back is level	Fat around tailhead beginning to feel soft
6 Moderately Fleshy	Fat beginning to be deposited	Fat beginning to be deposited	Fat beginning to be deposited	Fat over ribs feels spongy	May have a slight positive crease (a groove) down back	Fat around tailhead feels soft
7 Fleshy	Fat deposited along neck	Fat deposited along withers	Fat deposited behind shoulder	Individual ribs can be felt with pressure, but noticeable fat filling between ribs	May have a positive crease down the back	Fat around tailhead is soft
8 Fat	Noticeable thickening of neck	Area along withers filled with fat	Area behind shoulder filled in flush with body	Difficult to feel ribs	Positive crease down the back	Fat around tailhead very soft
9 Extremely Fat	Bulging fat	Bulging fat	Bulging fat	Patchy fat appearing over ribs	Obvious crease down the back	Bulging fat around tailhead

- **Using the chart shown to the left, a score of 1-9 is given to each point of reference, usually in ¼ increments.**
- **These scores are added together and averaged into the accurate body condition score for that horse.**
- **A body score of 1 has no apparent fat cover, a 5-7 is the average pleasure horse, and a 9 is an obese animal.**

* **The Henneke System was developed by Don R. Henneke, PhD of Tarleton State University in Texas in 1983.**

The Henneke System is a consistent method of objective evaluation of a horse's body condition based on visual and palpable fat cover over set points on a horse.

Appendix D: Data Sheet

BURRO IMMUNOCONTRACEPTION DATA SHEET

BURRO MANAGEMENT AREA: **Black Mountain HMA**

BURRO IDENTIFICAION NUMBER/NAME: _____

BURRO COLOR: _____

OTHER MARKINGS/BRANDS: _____

Inoculation Dates	ZonaStat-H PZP Dose (µg)[4]	Adjuvant	Delivery System[5]	Injection Site[6]	Vaccine Lot Number	Other Comments

POST-INOCULATION REPRODUCTIVE HISTORY (Diagnosed pregnancies and/or births) DESCRIBE ANY:

1. Drugs administered to this Burro concurrent with project (name of drug, dose, date):
2. Post-treatment health problems (with particular reference to injection-site abscesses):
3. Additional remarks: (location darted, distance darted)

[4] Standard dose is 100 µg with raw vaccine
[5] Pneu-Dart unless otherwise noted
[6] Left or right hip

Appendix E: Operating Procedures

Standard Operating Procedures for Fertility Control Treatments with Zona Stat-H PZP One-Year Liquid Vaccine

The following implementation and monitoring requirements are part of the Proposed Action:

1. PZP vaccine would be administered through darting by trained BLM personnel or collaborating research partners only. For any darting operation, the designated personnel must have successfully completed a nationally recognized wildlife darting course and who have documented and successful experience darting wildlife under field conditions.
2. Mares/jennies that have never been treated would receive 0.5 cc of PZP vaccine emulsified with 0.5 cc of Freund's Modified Adjuvant (FMA) and loaded into darts at the time a decision has been made to dart a specific mare. Mares/jennies identified for re-treatment receive 0.5 cc of the PZP vaccine emulsified with 0.5 cc of Freund's Incomplete Adjuvant (FIA).
3. The liquid dose of PZP vaccine is administered using 1.0 cc Pneu-Darts with 1.5" barbless needles fired from appropriate projectors designed for the dart.
4. Only designated darters would mix the vaccine/adjuvant and prepare the emulsion. Vaccine-adjuvant emulsion would be loaded into darts at the darting site and delivered by means of a capture gun.
5. Delivery of the vaccine would be by intramuscular injection into the left or right hip/gluteal muscles while the mare/jenny is standing still.
6. Safety for both humans and the horse/burro is the foremost consideration in deciding to dart a mare/jenny. Any smooth bore gun (projector) would not be used at ranges in excess of 30 m while rifled gun (projector) would not be used over 50 m, and no attempt would be taken when other non-darting persons are within a 30-m radius of the target animal.
7. No attempts would be taken in high wind or when the horse/burro is standing at an angle where the dart could miss the hip/gluteal region and hit the rib cage. The ideal is when the dart would strike the skin of the horse/burro at a perfect 90° angle.
8. If a loaded dart is not used within two hours of the time of loading, the contents would be transferred to a new dart before attempting another horse. If the dart is not used before the end of the day, it would be stored under refrigeration and the contents transferred to another dart the next day. Refrigerated darts would not be used in the field.
9. No more than two people should be present at the time of a darting. The second person is responsible for locating fired darts. The second person should also be responsible for identifying the horse/burro and keeping onlookers at a safe distance.
10. To the extent possible, all darting would be carried out in a discrete manner. However, if darting is to be done within view of non-participants or members of the public, an explanation of the nature of the project would be carried out either immediately before or after the darting.

11. Attempts will be made to recover all darts. To the extent possible, all darts which are discharged and drop from the horse/burro at the darting site would be recovered before another darting occurs. In exceptional situations, the site of a lost dart may be noted and marked, and recovery efforts made at a later time. All discharged darts would be examined after recovery in order to determine if the charge fired and the plunger fully expelled the vaccine.
12. All mares/jennies targeted for treatment will be clearly identifiable through photographs to enable researchers and HMA managers to positively identify the animals during the research project and at the time of removal during subsequent gathers.
13. Personnel conducting darting operations should be equipped with a two-way radio or cell phone to provide a communications link with the Project Veterinarian for advice and/or assistance. In the event of a veterinary emergency, darting personnel would immediately contact the Project Veterinarian, providing all available information concerning the nature and location of the incident.
14. In the event that a dart strikes a bone or imbeds in soft tissue and does not dislodge, the darter would follow the affected horse/burro until the dart falls out or the horse/burro can no longer be found. The darter would be responsible for daily observation.

Appendix F: ZonaStat-H PZP Mixing Procedures

Mixing Vaccine and Adjuvant Equipment Needed

2 5.0 cc glass syringes
1.5 inch needle
vial of adjuvant
vial of ZonaStat-H PZP
Luer-Lok connector
1.0 cc C-type or P-type Pneu-Dart dart with 1.5 inch barbless needle

Procedures

1. Place the 1.5 inch needle on a glass syringe

2. Draw out **0.5 cc** of adjuvant

3. Using the same syringe, draw up the 0.5 cc of ZonaStat-H PZP

4. Holding the syringe very carefully (*because the plunger can slip out*),
take off the needle and attach the syringe to the second syringe using the Luer-Lok connector
(*have the Luer-lok connector already attached to the second syringe*).

5.Push the ZonaStat-H PZP-adjuvant mixture back and forth through the two syringes **100 times**.
The resulting emulsion will become thick and look white.

THIS PROCEDURE IS VERY IMPORTANT
AND IS RELATED TO THE PRESENTATION OF THE ANTIGEN
AND THE SUBSEQUENT EFFECTIVENESS OF THE VACCINE.

6. Make sure all the emulsion is in one syringe.

7. Holding the first syringe very carefully (the one with the emulsion),
remove the second syringe, leaving the Luer-Lock on the first syringe.

8. If you are loading a 2.0 or 3.0 cc plastic syringe for hand-delivery,
attach the glass syringe to the plastic syringe and
inject the ZonaStat-H PZP emulsion in to the plastic syringe.
It is helpful if you move the plunger of the plastic syringe just a bit before pumping the ZonaStat-H *PZP emulsion into it.*
After loading the plastic syringe,
disconnect the glass syringe and
connect an 18g. 1.5 inch needle on the plastic syringe.

United States Department of the Interior

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GUIDELINES FOR HANDLING DESERT TORTOISE

1. Stop your vehicle and allow the tortoise to move off the road or out of the area or drive around the tortoise.

2. If the tortoise is not moving, gently** pick up the tortoise and move it approximately 200 feet off the road to a shaded location.

   a. **Do not** turn the tortoise over.

   b. Move the tortoise in the direction it was traveling. If it was crossing the road, move it in the direction it was crossing.

   c. Keep the tortoise within 12-18 inches of the ground, move slowly so as not to cause it to become alarmed.

   d. Release the tortoise under the shade of a bush or rock.

   ** Tortoise store water in their bladder. If a tortoise becomes alarmed its defense is to void its bladder onto the captor. This could lead to dehydration of the tortoise and potentially to death.

3. Prior to moving any parked vehicle or equipment at the project site check for tortoise under the vehicles.